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A SURVEY OF THE MATERIAL AND SOCIOLOGICAL CULTURE OF THE MANOBO OF EASTERN MINDANAO

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INTRODUCTION

THE following synoptical review was written as Chapters II & III of an extensive ethnological monograph on the Manobo of eastern Mindanao, Philippine Islands. The whole manuscript was written for the Bureau of Science, Manila, while the writer was still a member of the now extinct Division of Ethnology during the years 1907–1914.

In the preparation of his material the writer had the advantage of having lived, and established schools, among the Manobo for four years, during which time he came to acquire an intensive knowledge of their language and customs. Following that period he lived among them, for purposes of further study, all over the country in the guise of a trader and tribesman, in full conformity with tribal ways, even to the blackening of his teeth and to the growing of hip-long hair. Such procedure, opportunity, and knowledge gave him a familiarity with tribal ways and modes of belief and such an insight into the inner life of these remote people as would have been otherwise unattainable except after a far longer sojourn.

Before entering into the introductory details of habitat, etc., it may be well to remark here that in his travels among thirty Philippine tribes, some of them never before visited by white men *nor even by Filipinos*, and one of them by not even the contiguous tribes, he never experienced the slightest danger either to life, limb, or baggage. His experience leads him to believe that the

danger, hostility and ferocious practices attributed to so many primitive peoples are travelers' fantasmagoria or globe-trotters' colorizations. Good sense, sympathy, courtesy and common ordinary decency go far with tribespeople and bring a reciprocation in kind that is so frequently lacking among the great White Tribes.

The habitat of the Manobo with whom this article deals covers that huge rectangle of the great island of Mindanao which is included between the central Cordillera on the West, the hinterland of the Pacific coast on the east, the eighth degree of latitude on the South, and the Northeastern hinterland of the island on the North. The great mass, however, of these primitive tribesfolk live on the middle and upper reaches of the great Agusan river, which spirals its two hundred miles of crocodile-infested, forest-walled waters right through the center of the rectangle from its solitudinous sources in the South till it debouches its ooze-laden bulk into the seas on the Northern coast.

Dotting the banks of the whole Agusan river system—every five, ten or fifteen miles—are the little hamlets of these simple riverfolk. In groups of ten, twenty, thirty houses they stand scattered along the banks in one or two irregular streets—each house perched on its poles above the ground. In the background a few hundred yards away halts the primeval virgin forest, while down below on the surface of the river tug a miscellany of dugouts, at least one for every family head.

In the hinterland or over on the other side of the river but far back in the ancient jungle—one, two, three miles—over slimy leech-infested sinuous trails are the diminutive clearings of these primitive husbandmen, each one with its little hut, on which is grown the modicum of rice, yams, and little vegetable odds and ends for the simple needs of the family.[1]

In perusing the following article it must be borne in mind from the beginning that the descriptions and interpretations of

[1] Physical characteristics, including anthropometrical measurements, racial relationships, etc., are dealt with fully in the writer's extensive ms. which has been ready for the press for some time and which is now awaiting a favorable opportunity for publication.

Manobo life are applicable for the most part to the Manobo that have been least influenced by civilization and that still live their ancestral lives, uncommercialized, unsophisticated, and unspoiled, on the upper reaches of rivers and on the serried summits of Sierras, far from the hurry and scurry, bustle and rustle of the busy abodes of Civilization.

General Material Culture

Dwellings.—For a home the Manobo selects a site that is clearly approved by supernatural agencies and that is especially suitable for agricultural purposes by reason of its fertility, and for defense, because of its strategic position. Hereon he builds an unpretentious, square, one-roomed building at a height of from 1.50 to 8 m. from the ground. The house measures ordinarily about 3 by 5. Posts, usually light, and varying in number between four and sixteen, support the floor, roof, and intervening parts. The materials are all rattan-lashed and seldom consist of anything but light materials taken from the immediate vicinity. The floor is made of slats of palm or bamboo, the roof is thatched with palm-leaves, and the walls are light, horizontal, superimposed poles laid to about the height of the shoulders of a person sitting on the floor. The space between the top of the walls and the roof constitutes a continuous window. This open space above the low house wall permits the inmates, during a fight, to shoot their arrow at the enemy in any direction.

The one ceilingless room serves for kitchen, bedroom, and reception room. There is no decoration or furniture. Scattered around or hung up, especially in the vicinity of the fireplace, are the simple household utensils, and the objects that constitute the property of the owner—weapons, baskets, and sleeping-mat. On the floor farthest away from the door are the hearth frames, one or more, and the stones that serve as support for the cooking pots. A round log with more or less equidistant notches, leading from the ground up to the narrow doorway, admits the visitor into the house.

Under the house is the pig-pen. Here the family pigs and the chickens make a living off such refuse or remnants as fall from

above. The sanitary condition of this part of the establishment is in no wise praiseworthy. The only redeeming point is that the bad odors do not reach the house, being carried away by the current of air that is nearly always passing.

The house itself is far from being perfectly clean. The low, cockroach-infested thatch, the smoke-begrimed rafters, the unswept, dirt-bestrewn floor, the bug-infested slats, the smoke-laden atmosphere the betel-nut-tinged walls and floor, these and other features of a small over-populated house make cleanliness almost impossible. The order and quietude of the home is no more satisfactory. The crying of the babies, the romping and shouting of the boys, the loud talking of the elders, the grunting of the pigs below, the whining and growling of the dogs above, and the noise of the various household occupations, produce, in an average house containing a few families, a din that baffles description. But this does not disturb the serenity of the primitive inmates who laugh, chew, talk and work, and enjoy themselves all the more for the animation of which they form so great a part.

Alimentation.—In the absence of such luxuries as matches the fire-saw or friction method of producing fire is resorted to, although the old steel and flint method is employed.

The cooking outfit consists of a few home-made earthern pots, supplemented by green bamboo joints, bamboo ladles, wooden rice paddles, and nearly always a coconut shell for receiving water from the long bamboo water-tubes.

The various articles of food may be divided into two classes, one of which we will call the staple part of the meal and the other the concomitant. It must be remembered that for the Manobo, as well as for so many other peoples of the Philippine Islands, rice or *camotes* or some other bulky food is the essential part of the meal, whereas fish, meat and other things are merely complements to aid in the consumption of the main food. Under the heading, then, of staples, we may classify, in the order of their importance or abundance, the following: *camotes*, rice, taro, sago, cores of wild palm-trees, maize, tubers and roots (frequently poisonous). Among the concomitant or supplementary foods are the following, their order being indicative of the average esteem in which they

are held: fish (especially if salted), domestic pork, wild boar meat (even though partially putrescent), venison, iguana, larvae from decaying palm-trees, python, monkey, domestic chicken, wild chicken, birds, frogs, crocodile, edible fungi, edible fern, and bamboo shoots. As condiments, salt, ***if on hand***, and red pepper are always used, but it is not at all exceptional that the latter alone is available.

Sweet potatoes, taro, tubers, and rice are cooked by steaming. Maize and the cores of palm-trees are roasted over the fire.

There are only two orthodox methods of cooking fish, pork, venison, iguana and chicken: (1) in water without lard; (2) by broiling. Python, monkey, crocodile, wild chicken, and birds must be prepared by the latter method.

When the meal is prepared, it is set out on plates, banana leaves, or bark platters, with the water in glasses when available, or in coconut-shell dippers. On ordinary occasions the husband, wife, children, and female relatives of a family eat together, the unmarried men, widowers, and visitors partaking of their meals alone, but on festive occasions all the male members, visitors included, gather in the center of the floor.

The hands and mouth are washed both before and after the meal. All begin to eat together on the floor. The men eat with their left hands and, on occasions, when the remotest suspicion of trouble exists, keep their right hand on their ever-present weapons. It is customary not to leave one's place after the meal without giving due notice.

Narcotics and stimulating enjoyments.—The most common and indispensable source of every-day enjoyment is the betel-nut quid. It would be an inexcusable breach of propriety to neglect to offer betel-nut to a fellow tribesman. Not to partake of it when offered would be considered a severance of friendship. The essential ingredients of the quid are betel-nut and lime, but it is common to add tobacco, cinnamon, lemon-rind, and several other aromatic elements. At times substitutes may be used for the betel-leaf and betel-nut, if there is a lack of either.

Another important masticatory is the tobacco quid with its ingredients of lime and ***mau-mau*** juice. This is carried constantly

between the lips. Occasionally, however, the men like to smoke a little tobacco in small pipes or in little leaf cones.

The greatest and the most cherished enjoyment of all is drinking. Men, women, and children indulge, the last two sparingly. In Manoboland the fame of a banquet is in direct proportion to the number who become drunk, sobriety being considered effeminate, and a refusal to drink an affront to the host.

The main drinks are of four kinds: *Cabonegro* toddy, sugar-cane brew, *bahi* toddy, and mead. The first and third are nothing but the sap of the palms that bear their respective names, the sap being gathered in the same manner as the ordinary coconut *tuba*. The second or sugar-cane brew is a fermented drink made from the juice of the sugar-cane boiled with a variety of the ginger plant. It is the choice drink of Manobo and of Manobo deities. The fourth drink mentioned above is mead. It is similar to the last mentioned except that, instead of sugar-cane juice, honey is used in its preparation.

One feature of the drinking is that it is seldom unaccompanied by meat or fish. Hence, on every occasion on which a supply of these may be obtained, there is a drinking bout. Religious sacrifices, too, afford abundant opportunity for indulgence.

Quarrels sometimes ensue as a result of the flowing bowl and war expeditions are proposed, but on the whole it may be said that the Manobo is a peaceful and a merry drinker.

Means of Subsistence.—The Manobo makes his living by farming, fishing, hunting, and his womenfolk clean off the brush, sow broadcast a little rice, plant *camotes*, some taro, maize, and sugar-cane. As the rice crop seldom is sufficient for the sustenance of his household, the Manobo must also rely on the *camote* for his maintenance.

He obtains his supply of fish from the streams and rivers. When the water is deep and the current is not strong, he shoots the fish with a special bow and arrow. When the water is shallow and swift, he makes use of bamboo traps and at times poisons the whole stream.

To provide himself with meat, he occasionally starts off into the forest with dogs and seldom returns without a deer or a wild

boar. He keeps several spring-traps set somewhere in the forest, but it is only during the rainy season that he may be said to be successful with these. He has a trap for monkeys, a snare for birds, a decoy for wild-chickens, and uses his bow and arrow on monkeys and birds.

With meat that he procures from the above sources, together with lizards and pythons, which he sometimes catches, and fungi, larvae, and palm-tree cores which he finds in the forest, he manages to fill in the intervals between the ceremonial and the secular celebrations that recur so frequently during the year, and to keep himself fairly well supplied.

Weapons and implements.—The bolo and, in some districts, the dagger, is the inseparable companion of the Manobo. On the trails he always carries a lance and frequently a shield. For war he has an abaka coat of mail and a bow and arrow. In time of alarm he sets out bamboo caltrops, makes an abattis of fallen trees, and places human spring-traps around his lofty house.

For work he has a bolo and a primitive adze. These with a rice-header, a small-knife, a hunting-spear, a special arrow for hunting, a fish-spear, and perhaps a few fishhooks, serve all the purposes of his primitive life. With one or the other of these he fells the mighty trees of the primordial forest, performs all the operations of agriculture, of hunting, and fishing, builds himself a house, in certain districts hews out shapely canoes, whittles out handsome bolo sheaths, and makes a variety of other necessary and often artistic articles. They are the sum total of his tools and serve him instead of all the implements of modern civilization.

Industrial Activity.—The burden of toil falls on the woman. The man fells the heavy timber once a year, builds the house, hunts, fishes, traps, and fights. Practically all the rest of the daily labor is the woman's share. The man is the master, and as such he attends to all matters that may arise between his family and that of others.

Besides the occupations mentioned above, the man may engage, usually under the stress of a contract or of a debt, in canoe-making, mining, and basket making.

The women weave all the clothes of the family except when imported cloth has been obtained. Most of the clothes, both for men and women, are made of native woven cloth. The woman does all the sewing. A needle of brass wire in the absence of an imported needle and a thread of abaka fiber constitute her sewing outfit.

Almost all the material employed in weaving is abaka-fiber. The dyes are vegetable, their fastness depending upon the duration of the boiling. The Manobo woman, unlike the Mandaya women and women of most other tribes in Mindanao, has never developed the art of in-weaving ornamental figures. The best she can do is to produce warp and weft stripes.

The making of simple earthen-pots is also one of the industries of the woman. Pots are not, however, made in great quantities, the demand being, I think, a little greater than the supply.

Bed mats and rice bags are made out of various materials such as *pandanus* and *buri* in the ordinary Philippine style. The work is done principally by the woman and the supply is not equal, as a rule, to the family needs.

General Sociological Culture

Domestic life; marital relations.—In his choice of a wife the man is guided to a great extent by the wishes of his relatives, but the woman is given no option. There are no antenuptial relations between the pair, the marriage contract and all arrangements being made by their respective relatives. The transactions usually cover years. The woman's relatives demand for her an amount of worldly goods—slaves, pigs, bolos, and spears—that is almost impossible of payment. The man's relatives, on the other hand, strive to comply but make use of every means to gain the friendship of the other side and thereby bring about a more considerate demand.

When, perhaps after years of effort, an agreement is reached, a great feast is prepared by the two parties. The final payment is made by the man's relatives, and the following day a reciprocal banquet is given by the girl's relatives, in the course of which one half of the value of the payment made by the man's relatives is

returned by the girl's relatives as an indication that "she has not been sold like a slave."

The marriage ceremony consists in the exchange of rice between the bride and the bridegroom. This is followed by a religious rite that consists mainly in determining by divination the fate of the couple.

A marriage is sometimes effected by capture, usually, I think, with the connivance of the woman. But the procedure involves a heavier payment to the throng of armed relatives that invariably set out in pursuit of the captor.

Pre-natal marriage contracts are rare, but child marriage without cohabitation is practiced to a certain extent, especially among the more influential members of the tribe.

The age for marriage is about the age of puberty for the woman and about the age of eighteen for the men. Polygamy is a recognized institution, but is comparatively rare except among those who have the means to pay for the luxury of a second, third, or fourth wife. It presupposes the consent of the first wife, who always retains and maintains her position, there being no jealousy, as far as my observation goes, and few domestic broils. Polyandry is considered swinish, and concubinage is unknown. Divorce is not in accord with tribal customs. The same holds true for prostitution.

There is no evidence of the practice of endogamy which is so widespread among the Oceanic peoples. As a rule, however, the Manobo marries within his own tribe. This is due to his environment, to the hostile relations he ever holds with surrounding tribes, and to the differences of religious beliefs. The only impediments to marriage is consanguinity, but even this may be removed in the case of cousins by appropriate religious ceremonies. Such marriages are rare.

Upon the death of the husband, the wife is considered to belong to his relatives. Upon the presentation of a second suitor, she is re-married in the same manner as on her first marriage, but the payments demanded are not so high.

Marriages seem to result in reciprocal good understanding and happiness. The wife goes about her manifold duties day after

day without a murmur, while her master keeps his weapons in good condition, fishes, and hunts occasionally, goes on a trading trip at times, takes part in social gatherings, lends his voice in time of trouble, and goes off to fight if there should be occasion for it.

Faithfulness to the marriage ties is one of the most striking features of Manoboland. Adultery is extremely rare. The husband lives, at least during the first part of the married life, with his father-in-law, and displays towards his parent-in-law the same feeling that he entertains for his own parents. His wife is always under the eyes of her own parents, so that he is restrained from indulging in any marital bickerings.

Pregnancy, birth, and childhood.—The desire for children is strong. Hence voluntary abortion and infanticide are unknown. In case of involuntary abortion, which is comparatively frequent, the foetus is hung or buried under the house. When the child begins to quicken in the womb, the mother undergoes a process of massage at the beginning of every lunar month.

Parturition is effected almost invariably without any difficulty, the umbilical cord is cut usually with a bamboo sliver, the mother sits up "to prevent a reflux of the afterbirth into the womb," the child is washed, and the operation is over. If the mother cannot suckle her child, it is nourished with rice-water, sugar-cane juice and other light food, but is not given to another to be suckled. In a few days after her delivery the mother is up and back at her work. A little birth-party takes place soon after the birth in which the midwife receives a slight guerdon for her service.

The child is named, without any ceremony, after some ancestor, or famous Manobo, or occasionally receives a name indicative of some thing which happened at the time of the birth. He is treated with the greatest tenderness and lack of restraint. As he grows up he learns the ways of the forest, and about the age of fourteen he is a full-fledged little man. If the child is a girl, she helps her mother from the first moment that she is able to be of any service.

Birth anomalies are rare. I have seen several albinos and several people who might be called in a loose sense hermaphrodites.

Medicine, sickness, and death.—The Manobo attributes some twelve bodily ailments to natural causes, for the cure of such he believes in the efficacy of about as many herbs and roots. For wounds, tobacco juice and the black residue of the smoking pipe are considered a very good remedy. Betel-nut and betel-leaf are a very common cure for pains in the stomach. The gall of snakes has a potency of its own for the same trouble.

As a rule, all natural remedies are applied externally until such time as they prove unavailing, and the symptoms assume a more serious aspect.

Whenever an ailment is of a lingering character, especially if accompanied by increasing emaciation and not classifiable as one of the familiar maladies, it is attributed to magic causes. Certain individuals may have the reputation of being able to compound various noxious substances, the taking of which, it is believed, may superinduce lingering ailments. The pulverized bone from a corpse or the blood of a woman dried in the sun and exposed to the light of the moon and then mixed with finely cut human hair, are examples of such compounds. Other magic medicines exist such as aphrodisiacs, and bezoar-stones. When it is decided that the ailment is due to any of these magic causes, neutralizing methods must be resorted to, the nature and application of which are very secret.

Epidemics are attributed to the malignancy of sea-demons, and by way of propitiation, and inducement to these plague-spirits to hurry off with their epidemic, offering placed on raflets are launched in the nearest rivers.

As soon as it is realized that the malady is beyond the power of natural or of magic resources, recourse is had to the deities or good spirits, as will be explained under the head of religion. Upon the occurrence of a death wild scenes frequently take place, the relatives being unable to restrain their grief. Signals, by bamboo horns, are often boomed out to neighboring settlements to warn them to be on their guard. War-raids to settle old feuds are sometimes decided upon on these occasions, so all trails leading to the houses are closed.

The corpse is washed and laid out on its back in its best apparel. The coffin is a hexagonal piece of wood made out of a log with a three-faced lid also hewn out of a log. The body is often wrapped in a grass mat before being laid in the coffin.

Before decomposition sets in, the coffin is borne away by men amidst great grief and loud shouts. A high piece of ground is selected in a remote part of the forest for the last resting place of the deceased. A shallow grave is dug out, a roof of thatch is erected, a pot-ful of boiled rice is placed over the grave as a last collation for the departed one, and the burial party hurry back in fear to the settlement. As soon as they can provide themselves with temporary huts they almost always abandon the settlement.

Social and family enjoyment.—Music, instrumental and vocal, and dancing are the two great sources of domestic enjoyment. There are several kinds of instruments, which I will mention in the order of their importance and frequency of use. The drum, the gong, four varieties of flutes, four species of guitars, a violin, and a Jew's harp. With the exception of the first two, the instruments are made of bamboo and are, in every sense of the word, of the most primitive kind. The strings are of vine, bamboo, or abaka fiber.

The drum is the instrument of most frequent use. It is played during all dancing and at other times when a tribesman feels inclined. It is used as a signal to give alarm or to call an absent one. During the dance, religious or secular, it is nearly always accompanied by the gong. The use of the other instruments seems to depend upon the caprice of the individuals, though two of them appear to have a religious character.

With the exception of the gong and the jew's harp, all of these instruments can be made to produce varied and pleasing rhythm or music, according to the knowledge and skill of the performer. Each strain has its appropriate name, taken frequently from the name of the animal that it is supposed to imitate.

Instrumental music, in general, is of minor tonality, melancholy, weird, and suggestive in some ways of Chinese music.

Bamboo stampers are sometimes used to give more animation to a dancing celebration, and bamboo sounders are attached to looms to draw attention to the industry of the weaver.

Songs are always sung as solos. They are all extemporaneous and for the most part legendary. The language is archaic and difficult for an outsider to understand. The singing is a kind of declamation, with long slurs, frequent staccatos, and abrupt endings. Of course, there are war-songs that demand loudness and rapidity, but on the whole the song-music is as weird and melancholy as the instrumental. Ceremonial chants do not differ from secular songs, except that they treat of the doings of a supernatural world, and are the medium through which supplications are made to supernatural beings.

Perhaps the greatest of all social enjoyments, both for men and deities, is the dance. It is performed by one person at a time. Men, women and children take part. Dressed in a woman's skirt and decked out in all obtainable finery, the dancer keeps perfect time to the rhythm and clang of the gong.

System of government, political organization, and social control. Manoboland is divided into districts, more or less extensive, which are the property of the different clans. Each district is under the nominal leadership of the warrior-chiefs and of the more influential men. In time of peace, these districts are open to everybody, but in time of war—and wars were formerly very frequent—only persons of tried friendship are permitted to enter.

A clan consists of a chief whose authority is merely nominal, and a number of his relatives varying from twenty to perhaps two hundred souls. The whole system is patriarchal, no coercion being used unless it is sanctioned by the more influential members, and approved by the concensus of opinion of the people, and in accord with traditional custom.

The authority of the elder people is respected as long as they are physically and mentally able to participate in public gatherings. Those who have distinguished themselves by personal prowess always command a following, but they have a greater influence in time of trouble than in time of peace. Perfect equality reigns among the members of the clan except in the one respect that the recognized warriors are entitled to the use of a red head-kerchief, jacket, and pantaloons, each of these articles, beginning with the first being added as the number of people whom the warrior has killed is increased.

The chieftainship naturally falls to one who has attained the rank of *bagani*, that is to one who has killed a certain number of persons, provided he is otherwise sufficiently influential to attract a following. His duties consist in lending his influence to settle a dispute and in redressing the wrongs of those who care to appeal to him. As a priest he is thought to be under the protection of a war-god, whose desire for blood he must satisfy.

The *bagani* also acts as a medicine man, for he is reputed to have certain magic powers both for good and for evil. The natural secretiveness of the *bagani* made it difficult for me to secure much information on this point, but his power of harming at a distance and of making himself invisible are matters of general belief. In his character as a priest, he performs ceremonies for the cure of diseases in which fluxes of blood occur.

Methods of warfare. There is no military organization in Manoboland. The greater part of those who form a war-party are relatives of the aggrieved one, though it is usual to induce others of acknowledged prowess to take part. No resentment is harbored by the opposing party toward paid warriors.

Vendettas and debts are the most usual cause of war, and not, as has been reported, glory and the capture of slaves. There is never wanting on the part of those who originate the war a reasonable motive. The vendetta system is not only recognized, but vengeance is considered incumbent on the relatives of one who has been killed, and, as a reminder, a piece of green rattan is sometimes strung up in the house. The rattan suggests that until it rots the wrong will not be forgotten. If the father is unable to avenge the wrong, he bequeathes the revenge to his sons as a sacred legacy. Sometimes another person is deputed to take vengeance, in which case no blame is attached to him.

The peculiar custom prevails of killing a third party who may be neutral, or of seizing his property, but I have known such an act to be resented. As a result of this custom a war-party returning from an unsuccessful raid is dangerous.

There is usually no formal declaration of war. In fact, the greatest secrecy is generally observed, and in urgent cases a body of ambushers proceed at once to kill the first one of the enemy

that happens to pass their lurking-place. As a rule the location of the enemy's house and his actions are watched for weeks, perhaps for years, until a favorable opportunity for attack presents itself. The usual time for undertaking an expedition is during the rice-harvest and after a death. The preparation consists in acquiring a thorough knowledge of the enemy's house and its environment. Everything being ready, the warriors assemble, a sacrifice is made, omens taken, and the band starts out at such an hour as will enable them to reach the vicinity of the enemy about nightfall. From the last stopping-point a few warriors make a final reconnaissance in the gloom of the night, release the enemy's traps, and return. The whole band, numbering anywhere from ten to one hundred, advance, and, surrounding the house, await the dawn, for it is at the first blush of the morning that sleep is supposed to be the heaviest. .Moreover, there is then sufficient light to enable the party to make the attack. Hence the peep of dawn is almost always the hour of attack.

If the enemy's house is within spear-reach, it is usually an easy matter to put the inmates to death, but if it is a high house, and especially, if the inmates are well prepared, a warrior climbs up silently under the house and spears one of them. This, followed by the killing of pigs and by the battle-cry, usually causes consternation. A battle of arrows then takes place, there is a bandying of fierce threats, taunts, and challenges, and the attacking party endeavors to set the roof on fire with burning arrows. If they succeed the inmates flee from the flames, but only the children, as a rule, escape the bolo and spear.

It is seldom that the attack is prolonged for more than a few hours and it is seldom that the attack is unsuccessful, for if other means fail hunger and thirst will drive the besieged ones to flight, in which case they become the victims of the besieging warriors. If one of the latter is wounded or killed, the attack is abandoned at once, such an occurrence being considered extremely inauspicious.

Each warrior gets the credit for the number of people whom he kills, and is entitled to the slaves that he may capture. The warrior-chiefs open the breasts of one or more of the headmen of

the slain, insert a portion of their charm-collars into the opening, and consume the heart and liver in honor of their war-spirits.

During the return home, the successful warriors make the forest resound with the weird ululation of the battle cry, and adorn their lances with palm-fronds. Upon arrival at their settlement, they are welcomed with drum and song and loud acclaim. A purificatory bath is followed by a feast in which each one recounts the minutest details of the attack. After the feast some of the captives may be given to warriors who were unlucky or who desire to satisfy their vengeance. The captives are occasionally despatched in the nearby forest.

Ambush is also a very ordinary method of warfare. Several warriors station themselves in a selected position near the trail and await their enemy.

Whenever there is open rupture between two parties, it is customary for each one of them to erect a high house in a place remote and difficult of access, and to surround it with such obstacles as will make it more dangerous. In these houses, with their immediate relatives, and with such warriors as desire to take their part, they bide their time in a state of constant watch and ward.

When both parties in a feud are tired, either of fighting constantly or of taking refuge in flight, a peace-making may be brought about through the good services of friendly and influential tribesmen. On the appointed day, the parties meet, balance up their blood debts and other obligations and decide on a term within which to pay them. As an evidence of their sincere desire to preserve peace and to make mutual restitution, a piece of green rattan is cut by the leaders, and a little beeswax is burnt, both operations being symbolic of the fate that will befall the one that breaks his plighted word.

Intertribal and analogous relations. Intertribal relations between pagan Manobo and Christianized Manobo, and between the former and Bisaya, were comparatively pacific during my residence in the Agusan Valley. Between Manobo and other mountain tribes, excepting Mangguangan, the relations were, with casual exceptions, rather friendly, due, no doubt, to the lessons learned by the

Manobo in their long struggles with Mandaya, Banuaon, and Dibabaon up to the advent of the missionaries about 1877. The Manobo are inferior to the tribes mentioned in tribal cohesion and in intelligence. Their dealings, however, with Mangguangan who are undoubtedly their physical and intellectual inferiors, present a different aspect. With the Mandaya and Dibabaon, they have helped to reduce the once extensive Mangguangan tribe to the remnant that it is today.

Manobo and other mountain tribes have very little to do with each other. Only particular individuals of the various tribes, who have the happy faculty of avoiding trouble, travel among other tribes. In general, Manobo are afraid of the aggressiveness of their neighbors (excluding the Mangguangan), and their neighbors fear Manobo instability and hot-headedness, hence both sides pursue the prudent policy of avoidance.

Inter-clan relations have been comparatively peaceful since the establishment of the special government in the Agusan Valley. Occasional killings took place formerly and probably still take place in remote regions, notably on the upper Baobo. It is probable that, since my departure from the Agusan in 1910, these murders take place much less frequently, as the special government organized in 1907 has made great headway in getting in contact with the more warlike people of the interior.

Up to the time of my departure dealings between the various clans were purely commercial and of a sporadic nature. Old enmities were not forgotten, and it was considered more prudent to have as little as possible to do with one another. On all occasions when there is any apprehension of danger arms are worn. During meals, even on festive occasions, the Manobo eats with his left hand, holding his right in readiness for an attack. The guests at a feast are seated in such a way that an attack may be easily guarded against. Various other laws of intercourse, such as those governing the passing of one person behind another and unsheathing a bolo, regulate the dealings of man with man and clan with clan.

Commercial relations between the Bisaya and Manobo, both pagan and Christianized, constitute, on the part of the first mentioned, (Bisaya) a system of deliberate and nefarious spoliation

which has been denounced from the time of the first missionaries and which, by the establishment of trading-posts by the government, eventually will be suppressed. Absolutely inadequate values both in buying and selling commodities, use of false weights and measures, defraudation in accounts, demands of unspeakably high usury, wheedling by the *puanak* or friendship system, advancing of merchandise at exhorbitant rates, especially just before the rice-harvest, and the system of commutation by which an article not contracted for was accepted in payment at a paltry price,—these were the main features of the system. It may be said that the resultant and final gain would amount to between 500 and 1000 per cent.

The bartering was carried on in a spirit of dissimulation, the Manobo being cozened into the idea that the sale was an act of friendship and involved a comparative loss on the part of the Bisaya. A period, more or less extended, was allowed him wherein to complete the payment, with a promise of further liberal advances.

Since the Manobo has become aware of the stupendous gain of the Bisaya, he is not so prompt in his payments and in fact often thwarts his creditor by deliberate delays. Hence the frequent bickerings, quarrels, and ill-will that are ever a result of these commercial relations.

It is needless to say that throughout the valley there was great fluctuation of prices. Moreover the Manobo sold a part of his rice in harvest time at 50 centavos a sack, and in time of scarcity repurchased it at as much as 5 pesos.

The internal commerce of the Manobo presents, on the whole, a very different spectacle. It consists in simple exchanges. There is no circulation medium. The units of exchange are slaves (valued at from 15,00 to 30,00 pesos each), pigs, and plates, but with the exception of the first, these units are not constant in value.

The measures used are the *gantang*, a cylindrical wooden vessel with a capacity of from 10 to 15 liters; the *kaban*[2] which contains 25 gantang; the yard, measured from the end of the thumb

[2] Called also *bakid* and *anega*. A kaban is measured by counting 25 gantang.

to the middle of the sternum; the span, the fathom, the finger, and the finger joint.

Slavery is a recognized institution, but since the diminution of intertribal and inter-clan wars the number of slaves has diminished. Slaves were originally obtained by capture and then passed from hand to hand in making marriage payments. It sometimes occurs, in an exigency, that a man delivers a child, even his own, into captivity.

The slave is not generally ill-treated but has to do all the work that is assigned to him. He has no rights of any kind, possesses no property except a threadbare suit, and is usually not allowed to marry. However, he receives a sufficiency of food and seems to be contented with his lot.

Administration of justice: general principles and various laws. It is frequently stated by Bisaya and others that Manobo justice consists in the oppression of the weak by the strong, but I have not found this to be true. The Manobo is too independent and too much a lover of revenge to brook coercion. He recognizes a set of customary rules, and any departure from them is resented by him and by his relatives.

Nearly all the violations of right are considered as civil, and not as criminal wrongs, and upon due compensation are condoned. Failure on the part of the offender to make this compensation leads the aggrieved man and his relatives to take justice into their own hands.

The guilty one in nearly every case is allowed a fair and impartial hearing in the presence of his own relatives. The matter is argued out, witnesses are called, and the offender's own relatives generally exert their influence to make him yield with good will. Hence the feast that follows nearly every case of successful arbitration.

One of the fundamental customs of the Manobo is to regard as a duty the payment of one's debts, and this duty is performed sacredly and often at a sacrifice. Another fundamental custom is the right of revenge. Revenge is a sacred duty that is bequeathed from generation to generation, and from it result the long and terrible feuds that have devastated Manoboland.

Customary law is based on the intense conservation of the Manobo, fostered by the priests and strengthened by a system of religious injuctions and interdictions. Anyone who violates these taboos or interdictions becomes liable for all the evil consequences that may follow.

Property rights are understood and rigidly upheld, so much so that there seems to be no conception of a gift as such. Large tracts of land are considered the property of a clan, but anyone on good terms with the clan may settle on the land and may have all the rights of a clansman except those of fishing. Each individual becomes the temporary owner of the land that he selects and of the crops that he plants thereon. As soon as he abandons the land it becomes the collective property of the clan. Land disputes are unknown.

Property that is the result of one's labor or of one's purchase belongs to the individual except in the case of women, children, and slaves. Loss of, and damage to, property belonging to another must be made good, no excuse being admitted.

The law of contracts is stringent, but a certain amount of consideration is shown in case of a failure to fulfill a contract on time, unless a definite stipulation to the contrary has been previously made. All contracts are made in the presence of witnesses, and frequently a knotted rattan slip, representing the number of items or the number of days to elapse before payment, is delivered by the one who makes the contract.

Nearly all transactions are made on a credit basis, hence frequent disputes arise out of the failure of one party or the other to fulfill the terms of the contract. The failures are sometimes due to the fact that one individual man depends on payment from another in order to satisfy his debt to a third party. Undue delay on the part of a debtor finally gives the creditor the right to seize the property of the debtor, or even the property of a third party. Such an action is not common and is always taken under the stress of exasperation after repeated effort to collect have proved unavailing. As a rule the relatives of the debtor prefer to settle the obligation rather than to allow matters to become too serious,

but it happens at times that they, too, are obstinate and allow things to take their course.

No interest is charged on loans except in the case of paddy. There are few loans made, and no leases or pledges. These last imply a distrust that is not pleasing to the Manobo.

The law of liability is very strict, For instance, if one should ask another to accompany him on a journey and the latter should fall sick or die, the former would be liable for his death. If one should die in the house, thereby causing the abandonment of it, the relatives of the dead man would have to pay the value of the house. Similar instances are of frequent occurrence and can be readily understood. This liability law extends to evils supposed to be due to the violation of taboos and to the possession of magic powers.

There is a system of fining that serves, harsh though it may seem, to maintain proper deference to the person and the property of another. Thus, spitting on another, rudely grasping another's person, entering another's district without due permission, fishing in a river without the owner's leave, are a few of the many cases that might be adduced. The fine varies according to the damage and amount of malice that may be proved in the subsequent arbitration.

Regulations governing domestic relations and property, customary procedure in settlements of disputes. The house belongs collectively to the builders. The property in it belongs to the male inmates who have acquired it.

The elder brother takes possession of the property of his deceased brother, unless the eldest son of the deceased is of such an age as to be capable of managing the household. In case the deceased did not have a brother, a brother-in-law or son-in-law becomes the representative of the household. The eldest son inherits his fathers debts and must pay them.

There is so little property in the ordinary Manobo home that there are no disputes as to the inheritance. After a death the house is abandoned and the grief-stricken relatives scurry off with their baskets, mats, and simple utensils to make another home in a solitary part of the forest.

The relations both prenuptial and postnuptial between the sexes are of the strictest kind. All evil conduct from adultery down to immodest gazing is punished with appropriate fines and even with death. The fines vary from the equivalent of three slaves down to that of a few pesos.

The marriage contract is very rigid. I know of few cases in which the stipulated price was not paid prior to the delivery of the fiancée. In case of the death of one of the affianced parties the payments made must be refunded. In case of the refusal of the bridegroom to continue his suit even though there has been a fault on the part of the bride or of her relatives, he loses all right to recover. Should the bride's people, however, decide to discontinue the proceedings, they must return the previous payments and make compensation for the trouble and expenses incurred during the previous transactions. No case of a discontinuance of the marriage proceedings ever passed under my observation.

The father has theoretically full power over his wife and children, but in practise his domestic jurisdiction is of the most lenient kind. Marital affection and filial devotion reign in the household.

The husband may not marry a second wife during the lifetime of the first without the latter's consent. This rule, as well as the lack of sufficient wordly possessions to purchase another helpmate, makes polygamy comparatively infrequent.

The bridegroom is supposed to live with his father-in-law or with the previous owner of his wife, very often with his wife's brother, but nearly always sets up his own establishment a few years after marriage.

With the exception of adultery, fornication, rape, and wanton homicide, all crimes presuppose an appeal to arbitration. The author of another's death is the one on whom vengeance must be taken if it is possible.

When an outraged party is unable to obtain redress by arbitration or by direct reprisal, he avenges himself on a third part, preferably a relative of his enemy, by killing him or by seizing his property. He thus brings matters to a head. It is usual to

compound with the relatives of this third party, either for the death or for the seizure, on condition that they will league themselves with the one who is seeking revenge against the original wrongdoer or that they themselves will undertake, as his paid agent, to wreak vengeance on his enemy.

Minor offences are punished by fines that are determined by arbitration. These fines vary in amount, but nearly always include a feast, more or less elaborate, the expenses of which are borne by that party that lost the case.

The arbitration of a question may be made immediately after it has arisen or it may not be brought for weeks or months. When the discussion has begun it is not considered politic for either side to yield at once. Threats are bandied between the principals until, through the influence of friendly chiefs, they are brought together. Then the relatives discuss the affair, each side exaggerating its own view of the question. It is only after lengthy discussions, and the use of similitudes and allegories, loud shouts, dissimulation, and through the sagacity and influence of the chief men that the opinions of the parties are so molded that an agreement is reached.

It may be necessary to determine the offence. This is done by witnesses who give, as far as I have been able to judge, truthful testimony. Whenever the veracity of a witness is doubted he may be obliged to take a kind of oath which consists in the burning of beeswax. In the case of suspects, ordeals are employed. They consist of making the parties under suspicion either plunge their hands into boiling water, or undergo the diving test, or take the candle ordeal.

Circumstantial evidence is admissible. By means of it the authors of hidden crimes are often brought to punishment after years of patient waiting.

It is customary for the guilty one to make at least a partial payment immediately after the arbitration, and to treat the assembly to a banquet in which it is good form for the two opponents to close the breaches of friendship by generous quaffs to each other's health.

Religious Ideas

Survey of religion.—A study of Manobo religion is difficult because of the natural secretiveness and suspiciousness of this primitive man, because of his dependence for his religious ideas on his priests, because of variations and apparent contradictions that arise at every step and finally, because of his inability to expound in a satisfactory manner the beliefs of his religious system.

The religious belief of the Manobo is an essential part of his life. On his person he often carries religious objects. The site for his home is not selected till omens and oracles are consulted. In his method of cooking there are religious rules. He cannot procure his meat from the forest nor his fish from the streams without making an appropriate offering. He sows and harvests his rice under the auspices of certain deities. His hunting dogs are under the protection of a special divinity. His bolo and his spear must answer a special magic test. He cannot go forth to fight till divination and sacrifice have assured him success. All the great events of his life—his marriage, the pregnancy and parturition of his wife, death, burial, war—all are consecrated by formal, and often public, religious rites.

As far as I have been able to judge, fear of the deities, of evil spirits, of the dead, of all that is unintelligible, unusual, somber, is the mainspring of the Manobo's religious observances and beliefs.

In order to detect the evils, natural and supernatural, to which he may be exposed, he has recourse to dreams, divination, auguries and omens, and, in more serious cases he calls upon his priest to ascertain by invocation, oblation and sacrifice, the course of the evil that has befallen him, or of the danger that he fears.

Though there are two principal classes of beneficent divinities, little is known of one of these classes beyond its supposed existence. The other class is made up of humanlike deities called *diuata*, that retain a fondness for this world and the good things thereof. They select mortals for their favorites, and, through them, keep themselves provided with such earthly delicacies as they may desire, even though they may have to plague their mortal votaries in order to secure them.

There is another catagory of spirits of a slightly different character whose desire is blood. These are the war-divinities that select certain individuals for their champions and urge them on to deeds of valor, with the hope of procuring blood.

In contradistinction to the above divinities are others of a malignant or dangerous character. Chief among them are the *busau*, black, hideous spirits that dwell in dark desolate places, and who are for the most part implacable enemies of man. To counteract the machinations of these spirits, the beneficent deities are called upon by Manobo priests, and feasted with song and dance and sacrifice. Pleased with these tokens of friendship, the good spirits pursue the evil ones, and even engage in battle with them. The *tagbanua* are a class of local spirits that reign over the forest tracts and mountains. They are not of an unkindly nature as long as a certain amount of respect is paid them. Hence the practice of making offerings during hunting and other forest occupations.

Among the other inimical spirits are the rice-pilferer *Dagau*; *Anit* the thunderbolt-spirit; numerous epidemic-demons; the goddess of consanguinous love and marriage; the spirit of sexual excess; the wielder of lightning, and the manipulator of the winds and storms; the cloud-spirit and various others.

Agricultural and hunting operations are all performed under the auspices of gods and goddesses. Thus *Hakiadan*, and *Taphagan* take care of the rice during sowing and harvest time respectively; *Tagamaling* attends to other crops; *Libtakan* is the god of sunshine and good weather; and *Sugujun* is the god of the chase.

There are other gods—*Mandait*, the birth-deity; *Ibu*, the goddess of the after-world; *Makalidung*, the founder of the world; *Manduyangit*, the ferryman; and *Yumud*, the water-wraith.

The performance of nearly all the greater religious rites is left to the priests who are of two classes,—*bailan* or ordinary priests, and *bagani* or war-priests. It is the prerogative of these priests to hold communication with their familiar spirits, to find out from them their desires, to learn the doings of the unfriendly spirits, and the means to be taken for a mitigation of the evil in question.

The ordinary priests are simple intermediaries, claiming no wondrous powers, making use of no deceptive nor mercenary methods, as far as my observation goes, with no particular dress and little paraphernalia, having no political influence, but possessing, in all that concerns religion, paramount authority. Their title to priesthood is derived from the violent manifestations (such as trembling, perspiring, belching, semi-unconsciousness) that are believed to be a result of communication with their familiars.

The war-priests have blood-spirits for their favorites and, accordingly, perform their rites only in matters that concern war and wounds.

Ceremonial accessories consist of a few heirlooms, a small altar-house, a wooden oblation tray, a one-legged stand, a sacrificial table, ceremonial decorations, sacred images, and sacrificial offerings.

The religious rites peculiar to the ordinary priests, consist of betel-nut offerings, the burning of incense, invocations, prophylactic fowl-waving, omen-making, blood unction, the shield ceremony, the death-feast, the rice-planting ceremony, the hunting rite, and the sacrifice of pig and fowl.

The ceremonies peculiar to the warrior-priests are—besides the betel-nut tribute to the war-spirits and invocation offered to them— : invocation and offerings to the spirit-companions or "souls" of the living enemy, special forms of divination connected with war, a special invocation to the omen bird preparatory to the war-raid, placation and propitiation of the tutelary war-deities by invocation, by sacrifices and by ceremonial cannibalism.

The main features, then, of the Manobo religious system are:—

(1) A firm, traditional belief in the existence of anthropomorphic beneficent deities that will help the Manobo *if he supplies them with the offerings they desire* but if not, that will allow and *even cause* evil to befall him.

(2) A belief in the existence of forest-spirits and sky-spirits, who on occasions may become hostile and must be propitiated.

(3) An absolute reliance on priests, who are the favorites of one or more of the friendly divinities, and through whose mediation he secures their good will and assistance.

(4) The fear of the dead who are thought to harbor an envious feeling toward the living.

(5) The frequent consultation or interpretation of omens, auguries and oracles for ascertaining future events.

(6) A rigid adherence to a numerous set of taboos, some based on religious ideas, some founded on sympathetic magic.

(7) A frequent application of the principle of sympathetic magic by which one act is believed to be productive of a correlated result.

(8) A conscientious avoidence of everything disrespectful in word and act towards one of the brute creation.

(9) A belief in two spirit-companions or souls that accompany each mortal from birth till death.

(10) A belief in the possibility of capture of one of these spirit-companions by malignant spirits.

(11) A universal and constant faith in the existence of an after-world and of the survival of at least one spirit-companion therein.

(12) A belief in dreams as being often indicative of future evil.

(13) A belief in secret methods that may be productive of harm to others.

(14) The recourse to oaths and ordeals for the enforcement of promises and for the determination of guilt.

(15) The unmistakable apotheosis of bravery as illustrated by the warlike character of one class of deities.

The peculiar fear, entertained by the lowly votary, for lonely mountains, odd-shaped rocks, gloomy caves and holes, hot springs and similar formations of nature, his belief that planted things have "Souls" and his peculiar respect for animals and insects —these and minor manifestations may point perhaps to a former nature and animal worship, but at present there is no indication of such. The Manobo's conduct in the presence of such objects and phenomena is one of fear toward, and placation of, the agencies which, he believes, produce the phenomena or of the spirit-owners of the objects that come across his path. It is to them alone that he pays his respect, and not to the material object or manifestation that has become the object of his perception.

Though one of the characteristics of Manobo religion is the apotheosis of bravery, as is apparent from the warlike character of the divinities, and from the general desire to die the death of the slain, yet I find no trace of ancestor worship. The dead are feared, their burial-place is shunned, their character is deemed perfidious, and relations with them are terminated by a farewell mortuary feast after which it is expected that they will depart, to vex the living no more.

Mental and Moral Characteristics

The Manobo intellectual attainments are very limited. He counts on his fingers and on his toes, or by means of material objects such as grains of corn. He has no system of writing and does not know how to read. His "letters" and his "contracts" are material objects in the shape of bolos and other things, sent from one person to another with an oral message, or strips of rattan with knots. His method of counting is decimal, and comprehends all numbers up to a hundred, though I am inclined to think that this last number represents infinity to him.

The reckoning of time is equally simple. The day is divided into day and night, the hour being indicated by stretching out the arm and open hand in the direction of that part of the sky where the sun or the moon would be at the time it is desired to indicate.

The month is not divided into weeks but the lunar month itself is carefully followed, each phase of the moon having its distinct name, though it is only in the case of the plenitude of each phase that they agree on its name.

Years are reckoned by the recurrence of the rice-harvesting season, which varies according to the climate and geographical position of different regions. It is seldom that anyone can count backwards more than four or five years unless he can help his memory by some event such as an earthquake, an extra heavy flood, the arrival of the Spanish missionaries, the Philippine insurrection, or the growth of trees, but as a rule no attempt is made to determine the number of years that have elapsed since any event. I have seldom met a Manobo who had any idea as to his age, or any ability to judge approximately of the age of another. Historical knowledge is confined almost entirely to events that have occurred within one's lifetime. There are few traditions that have any historical value, and even in these there is an element of the wonderful that makes them unreliable as guides.

It is obvious that the pagan Manobo has made no advance along academic lines, due to the fact that he never has had an opportunity afforded him, but judging of his intellectual ability by that of the Christianized Manobo it is not inferior to that of the Bisaya. I had experience in organizing and conducting schools

among the *conquistas*, and it has been my experience that, *ceteris paribus*, they advance as rapidly as Bisaya. If the *conquistas* have not progressed as far intellectually, it is due to lack of facilities and not to any inherent inability to learn.

Knowledge of astronomy is limited among the Manobo to the names of a few of the principal stars and constellations. The nature of the stars, moon, sun, eclipses and kindred phenomena are all explained in mythological tales, from a belief in which no amount of reasoning can move them. The old story that the comet is the harbinger or bearer of diseases is in vogue.

Arts, such as painting and architecture, are unknown, though Manobo can carve rude and often fantastic wooden images, and make crude tracings and incisions on lime tubes and baskets.

Notwithstanding their lack of scientific and aesthetic knowledge, their observation of nature is marvelous. This is obviously due to long familiarity with the forest, the streams, and the mountains. From his boyhood years the Manobo has lived the life of the forest. He has scanned the trees for birds and monkeys, the streams for fish. Living, as he generally has, within a definite district, and roaming over it in search of game and other things to eat, at the same time keeping a close watch for any variation that might indicate the presence of an outsider, he has come to possess those marvelous powers of sight and of observation that would astonish the average white man. Within his own district the position of every tree is known. Every stream and every part of it, every mountain, every part of the forest is known and has its appropriate name. The position of a place is explained in a few words to a fellow tribesman and is understood by the latter.

Trees and plants are recognized, and their adaptation, in a great many cases, for certain economic uses is known, though I think that in his knowledge of the latter the Manobo is inferior to both the Bisaya and the Mandaya, as he is undoubtedly of a more conservative and less enterprising disposition.

The Manobo character has been so vilified by missionaries, and by all the Bisaya who have dealings with them, that it deserves a clearance from the aspersions that have been cast upon it. In dealing with the Manobo, as with all primitive peoples, the

personal equation brings out more than anything else the qualities that underlie character. Several of the missionaries seem not to have distinguished between the *pagan* and the *man*. To them the pagan was the incarnation of all that is vile, a creature whose every act was dictated by the devil. The Bisaya regarded him somewhat in the same light, but went further. He looked upon him as his enemy because of the many acts of retribution, even though retribution was merited, that had been committed by the Manobo or by his ancestors. He entertained a feeling of chagrin and disappointment that this primitive man was unwilling to become an absolute tool in his hands for *thorough* exploitation. Hence no name, however vile, was too bad for the poor forest-dweller who refused to settle near his plantation and toil—man, woman, and child—for an utterly inadequate wage. His feelings toward the *conquistas*, is little, if at all better.

Upon first acquaintance the Manobo is timid and suspicious. This is due to the extreme cautiousness that teaches him to guard a life that among his own people has only a nominal value. When in the presence of strangers for the first time, he remembers that reprisals have been bandied from time immemorial between his people on the one hand, and Bisaya on the other, and he realizes that without proper care, reprisals might be made on him. Again, if the visitor has penetrated into his district, his suspicion may be aroused to its full force by calumnious reports or rumors that may have preceded the visitor's arrival. My own visits were frequently preceded by rumors to the effect that I had magic power to poison or to do other things equally harmful; that I was a soldier in disguise, or by other similar reports. But in these cases and all others one may allay the timorousness and suspicion of these primitive people, to a great extent, by previous announcement of one's visit and intentions and upon arrival in their settlement, by refraining from any act or word that might betray one's curiosity. Surprise must not be expressed at anything that takes place. The mere question as to what, for instance, is beyond such and such a mountain or where are the head-waters of such and such a stream, may start up the full flame of suspicion. Hence prudence, a kind, quiet but alert manner, a good reputation from

the last visited locality, and a distribution of trifling gifts is always efficacious in removing that feeling of distrust which these primitive people feel towards a stranger.

Another charge is that they are revengeful. They certainly believe in "an eye for an eye, a tooth for a tooth." Revenge for an unatoned wrong is a stern fundamental, eternal law, sanctioned by Manobo institutions, social, political, and religious; one that is consecreted by the breath of the dying and passed on from generation to generation to be fulfilled; but it has one saving clause, ***arbitration***. Hence a stranger must inform himself of such past happenings as might jeopardize him. The Manobo has a very limited conception of the extent of the outside world and of the number of its inhabitants, and he is inclined to believe that one American, for instance, knows every other one and may be related by blood to any other. Hence any imprudent action on the part of one may draw down revenge on the head of another,[3] relative or not, for even innocent third parties may, by Manobo custom, be sacrificed to the unsatisfied spirit of revenge. The danger, however, in which a stranger might find himself from this cause, is easily eliminated by questioning the people as to who had wronged them on previous occasions; and should he learn that he is considered a party to the wrong through identity of blood or of race with the guilty one, he must gently suggest a plan for arbitration at some later date, and in other pacific ways, avert the revenge from himself.

It is, moreover, affirmed that Manobo are treacherous. If by treachery is meant a violation of faith and confidence, they cannot be said to be treacherous. They kill when they feel that they are wronged. I know of few cases where they did not openly avow their feelings and demand reparation. Refusal to make the reparation demanded is equivalent to a declaration of war, and in war all is fair. It is every man's duty to safeguard himself as best he can. The Manobo, Mandaya, Mangguangan and Dibabaon houses erected in strategic positions throughout the interior of

[3] It is almost certain that the death of Mr. H. M. Ickis, geologist, of the Bureau of Science, Manila, was partly due to the capture and exile of one Gubat of the upper Umaiam some 15 or 20 years ago.

eastern Mindanao bear witness to the fact that these people recognize the principle that all is fair in war. The fact that they frequently carry their spears and shields when on the trail, and in time of trouble accompany their womenfolk to the farms and guard them there, is sufficient evidence of the fact that every means must be taken to safeguard one's self and interests from an enemy. But let a case be once arbitrated, and beeswax burned or other solemn manifestation of agreement be made, and it is my opinion that the pledge will not be broken.

Cowardice is a trait attributed to Manobo and other people of Mindanao. It is true that they do not take inordinate risks. The favorite hour for attack on an enemy's house is dawn. They perfer to thrust a spear through the floor rather than to call the enemy out to fight a hand-to-hand battle. In other cases they prefer to ambush him on the trail, five or ten men against one. Again, it may be more convenient to pick off a lone woman in a *camote* patch. Such are recognized methods of warfare. Once aroused, however, the Manobo will fight, and fight to a finish. Throughout the Jesuit letters we find mentioned various instances of really brave deeds on the part of the Manobo. In some cases the husband killed his family and then himself rather than fall into the hands of the Spanish troops. I have been informed of hundreds of instances in which the male members of the attacked party threw themselves against superior numbers in order that their wives might escape. Hand-to-hand encounters are not uncommon, if I may believe the endless stories that have been narrated to me by warriors throughout eastern Mindanao.

Laziness and dilatoriness can certainly be predicated of Manobo men, but such qualities are to be attributed to lack of incentive to work and to hurry. All the household duties fall by custom upon the shoulders of the women, so that there is little left for the men except to fish, hunt, trap, trade, and fight. When the men set themselves to clearing the forest or to other manual tasks, it is surprising with what agility, skill, and perseverance they work, though such spells of labor are short-lived.

No one has ever uttered a written word against the Manobo sexual morality. It is true that sexual matters are discussed with

the greatest freedom, but the most venial breaches of morality are punished. The greatest modesty is observed in regard to the exposure of the private parts. Gazing at an undressed woman, for instance, at the bathing-place, results in a fine. Unseemly insinuations to a woman are visited with a similar punishment, but if such overtures go further, even death may be the penalty.

As to temperance and sobriety, the rule is to eat and drink all one can, hence the amount of food and drink consumed depends upon the supply. Sobriety is not a virtue. To lose one's equilibrium and sense is to do honor to the host and justice to his generosity.

Honesty is certainly a trait of the Manobo character. I do not mean to maintain that there is not occasional pilfering, especially in small things that are considered to be more or less communal in their nature, such as palm-wine while still flowing from the tree, but other kinds of property are perfectly safe. The rare violations of the rule of honesty are punished more or less severely according to the amount of property stolen and according to other considerations.

Though respect for another's property is decidedly the rule, yet it is surprising to note with what care everything is counted, tied up, or put away, and how marks of ownership are set up on all occasions. I think, however, that these precautions are due not so much to a fear of pilferers as to a feeling of the instability of conditions in a country that has always been subject to turmoil.

Honesty in the payment of debts is one of the most striking characteristics of these people. I have advanced merchandise on credit to people whom I had never met before and the whereabouts of whose houses I did not know except from their own information, and yet, six months or a year later, when I entered their region I had no difficulty in locating them nor collecting from them. So high is their feeling of obligation to pay a debt that even children are sometimes parted with in settlement, but this occurs in extreme cases only. Though debts are satisfied conscientiously, yet a certain amount of consideration is expected as to the time and other details of payment, except in some very urgent cases.

Honesty in other matters, as in the performance of formal agreements, is equally noticeable though I must say that the performance may not be as prompt in point of time as *we* would expect. But it must be remembered, in connection with this last point, that in making an agreement one is presumed to make allowance for a great many impediments, such as evil omens, that do not figure in our system of contracts. Another difference, which applies also to the matter of debt, is that the man who owes a debt must be reminded of his obligation and urged in a gentle way to the performance of it. It occurs in some rare instances that a debtor is under a definite contract as to the exact time for meeting his obligation. In these cases, the creditor may be more insistant upon payment. It is to the credit of the Manobo that he never disowns a debt nor runs away to avoid the payment thereof.

It has been said that the Manobo is ungrateful, but I do not think that his gratitude is so rare nor so transitory a virtue as is claimed by those who pretend to know him. It is true that he has no word to express thanks, but he expects the giver to make known his desires and ask for what he wants. This is the reason why he himself is such an inveterate begger. He receives you into his house, feeds you, considers you his friend, and proceeds to make you reciprocate by asking for everything he sees. If he is under any obligation to you, he expects you to ask in a similar manner. If you do not do it, he considers you either apathetic or rich, and hence no reciprocation is forthcoming. Among the Manobo no presents are made except of such trifles as have no value.

The Manobo feels that he is at perfect liberty to conceal his real thoughts and to give utterance to such distortions of truth as may not compromise him with others. The penalty for slander is so great that this fault is seldom committed. Hence to get the truth from a Manobo, it is useless as a rule, to question him singly or even in the presence of his friends alone. He must be brought face to face with those who hold an adverse opinion or belong to an opposite faction. If this can be done, in a more formal way, as for example, by having a number of principal men attend, it will be so much the easier to obtain the desired information.

Queries as to trails or the dwelling-places of neighboring Manobos are hardly ever answered truthfully and do more harm than good because they tend to arouse suspicions as to the questioner's motives. Such information is obtained more readily by cultivating the friendship of boys than by consulting the older folks. This tendency to disguise or to distort the truth, though it has its natural basis in a desire for self-protection, give the Manobo a reputation for lack of the straightforwardness and frankness that is so noticeable among the Mandayas even after very short acquaintance. This lack of frankness, coupled with a certain amount of natural shrewdness, makes the truth difficult to discover, unless the suggestion made before be carried out, or unless one is willing to wait till the truth leaks out in private conversation among the Manobo themselves.

One trait of the Manobo that seems hard to understand is love for long discussions. No matter how trifling the matter may be it always becomes the subject of an inordinately long conference even though there are no dissenting parties. Even in such trifles as getting a guide to take me, by well-known trails, to settlements of people with whom I was well acquainted, the inevitable discussion would always take place. A great number of people would assemble. The matter would be discussed at length by every one present without a single interruption, except such exclamations of assent as are continuously uttered whether the speaker's views are acceptable or not. It seems that these and more solemn discussions afford the speakers an opportunity to make themselves conspicuous or to display their judgment. I can divine no other reason for these conferences because, in many cases that I have known, the result of the discussion was a foregone conclusion from the beginning. Perhaps such discussions are for the purpose of "making no concessions" or if they must be made, of making them begrudgingly.

These conferences are as a rule rather noisy, for though one speaker at a time "has the floor," there are always a number of collateral discussions, that, joined to the invariable household sounds, produce somewhat of a din. Noise, in fact, is a general characteristic of Manobo life, so much so that at times one is

inclined to be alarmed at the loud yelling and other demonstrations of apparent excitement, even though the occasion for it all may be nothing more than the arrival in the settlement of a visitor with a dead monkey.

Harmony and domestic happiness are characteristic of the Manobo family. The Manobo is devoted to his wife, fond of his children, and attached to his relatives, more so than the Manggauangan, but much less so than the Bisaya or the Mandaya. He is dearly fond of social gatherings for besides the earthly comforts he gets out of them, they afford him an opportunity to display such wealth, rank, and possessions as he may possess. His invitations to neighbors serve to keep him high in their estimation and thereby gather around him a number of friends who will be of service in the hour of trouble. Of the Manobo, as of the other people of Mindanao, too much cannot be said of his hospitality. If he has once overcome his suspicions as to a stranger's motives, he takes him into his house and puts himself to infinite pains to feast him as best he knows how. In Manoboland, one who travels carries no provisions. He drops into the first house and when the meal hour arrives he sits down upon the floor and helps himself without any invitation. It is practically his own house, because for the time being he becomes one of the family. If there happens to be a feast, he partakes without any special invitation and when he is ready to go, he proceeds upon his journey, only to repeat the operation in the next house, for it is customary always to pay at least a short visit to every friendly house on or near the trail.

One of the mental traits that has perhaps done more than anything else to retard the Manobo in his progress towards a high plane of civilization is his firm adherence to traditional customs. All things must be done as his forefathers did them. Innovations of any kind may displease the deities, may disturb the present course of events, may produce future disturbances. "Let the river flow as it flowed—to the sea" is a refrain that I heard quoted on this subject by Manobo. "Fish that live in the sea do not live in the mountains" is another, and there are many others, all illustrating that conservatism that tends to keep the Manobo a Manobo and nothing else. He is Christianized but, after going through the

Christian ritual, he will probably invoke his pagan divinities. He takes on something new but does not relinquish the old. Hence the difficulty of inducing the Manobo to leave the district of his forefathers, and take up his abode in a new place amid unfamiliar spirits.

This feature of their character explains the inconstancy and fickleness exhibited by the Christianized Manobo at the beginning of their conversion. They were due to the call of the forest hailing them back to their old haunts. These characteristics will explain also a host of anomalies that are noticeable throughout the Manobo's life.

The first visit of a stranger to a primitive settlement may produce upon him a very unfavorable impression. He may find that the women and children have fled, so that he finds himself surrounded by men, all armed. This should not discourage him as it happens in many cases that the men are unable to keep the women from flight. The wearing of arms is as much a custom with Manobo as the wearing of a watch is with us. The bolo is his life and his livelihood. Were he not to wear it he would be branded as insane, and be looked upon as a defenseless person.

Upon first acquaintance the Manobo will ask a host of questions that tax the patience of the visitor if he ventures to answer them personally. These questions spring from a desire to learn the motive of the visit. People from the neighboring houses drop in at intervals just as soon as word reaches them of the new arrival, and may continue to do so until the time of the visitor's departure, thereby keeping the house crowded. The assembling of these people arises from a desire to see the visitor and to find out the object of his visit. They will proceed to ask him every imaginable question that may suggest itself and if an answer conveys information that has anything of the wonderful in it for them, it gives rise to a thousand and one other questions.

Another phase of the visit is the frank demand on the part of the primitive people for any object of the visitor which they may take a fancy to. They always understand, however, a quiet refusal, if it is accompanied by an appropriate reason.

It happens sometimes that the chief of the settlement will claim a fee for transgression upon his territory, but he will usually accept a small present in lieu thereof, or will forego any gift, if the matter is argued quietly and diplomatically. The Manobo resents harsh words, especially when used towards him in the presence of his nominal subjects. Personalities or threats in such cases often prove fatal.

It is not good etiquette to ask a Manobo his name, especially if he is a chief, until one has acquired somewhat of an acquaintance with him. The information must be secured from a third party and in a quiet way. Moreover, it is customary to address chiefs and other persons of distinction by the names of their corresponding titles. Thus a warrior-chief is addressed *bagani*, and not by his proper name.

It is needless to say that no familiarity should be taken with the person of another until acquaintance has been cultivated far enough to permit it. Thus touching another on the arm to call his attention to something may be resented and may result in an attempt to collect a fine.

The handling of arms requires a word. The lance must be stuck in the ground, head up, at the foot of the house ladder; or if it must be brought into the house, as at night, the owner must take care that it points at no one while being handled. If one desires to draw a bolo from beneath its sheath, he must draw it slowly, and if it is to be presented to another, the blade must be kept facing the owner's body and the handle presented to the other man. The same rule holds for the dagger.

It will be noticed that as a general rule the men in a Manobo settlement go armed and keep their hands on their weapons, especially during meal-time, at which time it is customary to eat with the left hand, the right hand being reserved for the use of the weapon in an emergency.

A LIST OF PETROGLYPHS IN BRITISH COLUMBIA[1]

By HARLAN I. SMITH

IT SEEMS desirable to place on record the following list of petroglyphs in British Columbia, which is complete so far as known to date. By petroglyph is meant in this connection sculpture in low relief situated on rock in situ or at least of rather large size. Regarding these petroglyphs a certain amount of information is on file in the Victoria Memorial Museum, Ottawa. The list is arranged geographically, from northwest to southeast.

Correctness of identification, both as to the object being a petroglyph and as to its location, is vouched for except in the case of data marked "(reported)," and most of those are probably correct. Frequently reports from several unbiased observers are received regarding a single site. Further data as to reported petroglyphs and additions to the list are desired for the file.

As the "Historic Objects Preservation Act," passed by the Province of British Columbia in 1925, applies to these petroglyphs it is appended to this list.

Coast

On bowlder about a mile from Skidegate, Graham Island (Illustrated in Newcombe, Petroglyphs, 1907).

Three quarters of a mile east of Metlakatla.

East side of head of Kitselas Canon (Reported).

On Gold Creek (Reported).

Half mile from Skeena River, east side of head of Kitselas Canon (Reported).

Six feet above high tide on cliff, left side going up mouth of Salmon river, Pitt island, northern end of Grenville channel (Reported).

Under east end of store, Lowe inlet (Reported).

East arm of Mussel inlet, near Mathieson channel, north of Bella Bella (Reported).

North side of Myers pass, Princess Royal island (Reported).

On Trail, north side of Canyon of Dean river, about two miles

[1] Published by permission of the Acting Director, Victoria Memorial Museum, Ottawa, Canada.

from Kimsquit Cannery (Photographic negative of one in Victoria Memorial Museum).

North of beach, north of mouth of Swallop creek, Dean channel south of Kimsquit (Photographic negatives and tracings of all in Victoria Memorial Museum).

North of mouth of Swallop creek, Dean channel south of Kimsquit (Plaster of Paris moulds of two and photographic negatives and tracings of all in Victoria Memorial Museum).

On two bowlders on beach, east side of mouth of Elcho (Alice) harbor, Dean channel (Plaster of Paris moulds of one and photographic negatives and tracings of both in Victoria Memorial Museum) (One figured in Smith, Alexander Mackenzie, 1924).

West side of falls, two miles south of Bella Coola (Photographic negatives, Plaster of Paris moulds, and tracings, in Victoria Memorial Museum).

West side of canyon, one mile south of Bella Coola river, about three miles above its mouth (Plaster of Paris moulds of some, tracings of all others, and photographic negatives of some, in Victoria Memorial Museum).

Opposite mouth of Noosatsum river, Bella Coola valley (Plaster of Paris mould, photographic negatives and tracing, in Victoria Memorial Museum) (Reports probably of others near here).

South side of mouth of Noeick river, South Bentinck arm (Photographic negatives and tracings in Victoria Memorial Museum) (Figured in Smith, Noeick, 1925).

Near fishery boundary on Rocky point near mouth of Quaquinstis creek at head of bay on west side of south end of Return pass. (Five photographic prints in Victoria Memorial Museum) (Reported).

On cliff on shore of Ellersley lake (Many reported by Indians) (Possibly confused with pictographs).

On the shoreward face of jagged rock at the high water mark on Denny Island, four miles towards "Steamboat" (Gunboat?) pass from Bella Bella (Reported).

West side Smith inlet, near Rivers inlet (Reported with red pictographs that are visible from passing steamer).

Cape Commerell (Reported).

Beach about three quarters of a mile west of Fort Rupert (Plaster of Paris mould? and photographic negative in American Museum of Natural History, New York) (Figure 4, Plate XXXI, Smith, *Album*, 1923).

Beach at Fort Rupert (Photographic negatives in United States National Museum or American Museum of Natural History, New York) (Plates 23, 25, Fig. 61 and Plates 24, 26 in Boas, Social, 1897, reproduced as Figs. 2, 3 and 4, Plate XXXI and Figs. 1 and 2, Plate XXXIII, respectively, in Smith, *Album*, 1923).

Beach at Alert Bay (Photographic negative in American Museum of Natural History, New York).

Port Neville (Reported).

Grey creek, seven and a half miles east of Loughborough inlet (Reported).

Cape Mudge (Reported).

Northern shore of Hornby island (Reported).

Yellow Island, Baynes sound, near Comox. (Plaster of Paris moulds in American Museum of Natural History, New York) (Casts of parts in Provincial Museum, Victoria) Illustrated in Newcombe, *Petroglyphs*, 1907. (Fig. 5, Plate XXXI, Smith, *Album*, 1923.)

Shore of eastern side, Great Central lake, three miles below the head. (Fig. 116, Smith, Gulf of Georgia, 1907. Slightly different from photograph of retouched petroglyph.) Photographic negative in Victoria Memorial Museum, also one by Fleming of Victoria, and unreliable illustrations from memory published in one or two English papers, probably the *London News*, also in the *Overland Monthly*.

Sproat lake (Fig. 161 with right figure inverted, Boas, *Felsenzeichnung*, 1891; Fig. 3, Mallery, *Picture*, 1893, Plate XXXII, Smith *Album*, 1923; and illustrated in Newcombe, *Petroglyphs*, 1907). (Photographic negative of part in Victoria Memorial Museum.)

Departure bay (Reported).

Beach of point extending south from Brechin Mine, Nanaimo (Photographic negatives, in Victoria Memorial Museum).

On property of Western Fuel Co., two miles south of Nanaimo. (Plaster of Paris moulds in American Museum of Natural History, New York. Duplicate of largest in Victoria Memorial Museum. Cast of largest in Provincial Museum, Victoria. Casts of four from A.M.N.H. moulds in Field Museum of Natural History, Chicago. Cast of part of largest in Museum of the Art, Historical, and Scientific Association, Vancouver.) (Photographic negative of largest in Victoria Memorial Museum. Photographic negatives in American Museum of Natural History, New York.) (Fig. 4, Plate XXXIII, Smith, *Album*, 1923, after Plate XI, and Fig. 2, Plate XII, Smith, *Gulf of Georgia*, 1907. Also illustrated, except left lower figure in American Museum Report, 1898; and Newcombe, *Petroglyphs*, 1907. Upper part also illustrated in Fig. 1, Plate XI, Smith, *Gulf of Georgia*, 1907, from cast in American Museum of Natural History) (Another figure illustrated in Fig. 3, Plate XXXIII, Smith, *Album*, 1923, and Fig. 117c, Smith, *Gulf of Georgia*, 1907.) (Another figure illustrated in Fig. 1, Plate XII, Smith, *Gulf of Georgia*, 1907.) (Other figures illustrated in Figs. 117 a and b, Smith, *Gulf of Georgia*, 1907.)

Jacks point, near Nanaimo (Reported).

Nanaimo river falls (Reported).

Close to Digman's wharf, south end of Gabriola island (Reported).

Squamish (Reported).

On bowlder west side Helen point, Active pass, Mayne island (Reported).

Clo oose, west coast Vancouver Island (Reported). (Possibly painted pictograph rather than relief.)

Aldridge point, Beecher bay, about fifteen miles west of Victoria. (Two illustrations in Smith, Aldridge, 1924.)

Saginaw lake, Butte inlet (Reported).

Interior

Riverbank, Kispiox (Removed to Hospital grounds, Hazelton). (Photographic negative, plaster of Paris mould and tracing Victoria Memorial Museum.)

Road near Kispiox (Removed to C. V. Smith estate, Hazelton).

(Photographic negative, plaster of Paris mould and tracing in Victoria Memorial Museum.)

East side of Skeena river below Glen Vowell bridge (Reported). (Petroglyph in Victoria Memorial Museum obtained from an Indian may be part or all of this.)

Hunting-ground of Duncan, an Indian of Prince George, at headwaters of Big Salmon river (Reported).

Below Churn creek, Fraser river (Reported).

Half way between Lone Cabin creek and Big bar, Fraser river (Reported as being moved to Vancouver).

Leon creek, Fraser river (Reported).

A quarter of a mile above the mouth of Fountain creek, east bank of Fraser river (Reported).

On bowlder, half a mile east of Lillooet. (Photographic negative in Victoria Memorial Museum.)

Half a mile south of east end of Alexandria bridge on east side of Fraser river within fifteen miles of Yale (Reported 250 feet long).

Seton lake (Reported. Doubtful).

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VICTORIA MEMORIAL MUSEUM,
OTTAWA, CANADA

Certified correct as passed Third Reading on 16th December, 1925.
C. K. COURTNEY, Law Clerk

HON. PROVINCIAL SECRETARY

BILL

No. 66) (1925

An Act to Provide for the Preservation of Historic Objects

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of British Columbia, enacts as follows:

Short title

1. This Act may be cited as the "Historic Objects Preservation Act."

Designation of historic objects

2. The Lieutenant-Governor in Council may declare any primitive figure or legend cut in or painted upon rock, or any group of such figures or legends, or any structure, or any natural object existing within the Province to be a "historic object" within the meaning and scope of this Act, and may make provision for the erection and maintenance in the vicinity of such historic object of a notice referring to this Act, in such form as may be deemed advisable.

Preservation of historic objects

3. Where a notice has been erected in the vicinity of any historic object pursuant to this Act, no person shall, except pursuant to a permit in writing of the Provincial Secretary first obtained, remove, deface, obliterate, alter, add to, or otherwise interfere with that historic object, or the notice so erected, nor shall any person cut, or carve, or write, or paint any figure, legend, or name in or upon any rock or material comprised in or appurtenant to that historic object.

Penalty

4. Every person violating any provision of section 3 shall be Penalty liable, on summary conviction, to a fine not exceeding five hundred dollars.

VICTORIA, B. C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty
1925

A PICTOGRAPH ON THE LOWER SKEENA RIVER, BRITISH COLUMBIA

By Harlan I. Smith

A PICTOGRAPH, probably unique in being visible from passing railroad trains, may be seen about a mile and a half east of Tyee on the north side of the Skeena river in British Columbia.

Fig. 1. Pictograph near Tyee, B. C.

This place, which is illustrated in Fig. 1, is about twenty-eight miles from Prince Rupert, or, to be more exact, between the 91st and 92nd mile posts west of Pacific Station. It is opposite the fourth telegraph pole east of the 92nd mile post. The place is on the eastern side of a bay of the river which the railway crosses on a fill. The pictograph may be seen from the bridge in this fill,

[1] Published with permission of the acting director, Victoria Memorial Museum, Ottawa, Canada.

and from there eastward to the place where the railway makes a cut through the point of rock on which the pictograph is situated. At this place the telegraph wires cross the track. The pictograph is about 50 feet from the track and approximately level with it on a nearly vertical face of a granitic cliff. The rock slopes back about six inches in six feet and the pictograph is consequently exposed to the weather. (The bottom of the largest "copper," one of the figures in the pictograph, is 6 feet 10 inches above the horizontal rock at the base of the cliff.)

The pictograph faces westward or nearly parallel with the railroad. Consequently it can be seen from the west, that is, by looking ahead on the left when traveling east or by looking back on the right when going west.

On June 5, 1925, I discovered this pictograph from a passing train and three months later cut the small alder and spruce trees in front of it to allow of photographing all of it and to make it entirely visible from passing trains. Photographs and motion pictures were then taken and are now available in the photographic division of the Department of Mines, Ottawa, Canada.

The pictograph, which is illustrated in Fig. 1, is approximately twenty feet long and comprises eight figures. (To be exact it is 9 feet 3 inches from the lower left corner of the largest "copper" or second figure from the left to the lower right corner of the one at the right.) It represents six complete "coppers," the upper part of a seventh "copper," and a face resembling a human being's although it may possibly be that of a mythical character. The "coppers" are drawn in red, apparently the same shade as most other pictographs in British Columbia while the face is in brown or purplish brown, the only pictograph I recall of this color. The six "coppers" are in a row, the incomplete one being below the second of these from the left. The face is above and to the right of the "coppers."

In the case of each of the six "coppers" there is the usual horizontal line between the upper and lower part and the vertical line from this to the base, the latter line dividing the lower part of the "copper." In the upper part of the "copper" at the left no marks were noticed, but in the second there is a ring-like figure

with seven radiating lines on its upper outline. In the third and sixth "coppers" instead of this ring there is a horizontal line with five little lines nearly perpendicular to its upper edge. In the fourth "copper" only three lines could be discerned. There is a horizontal line also in the fragment of a "copper." These "copper" figures are characteristic of the North Pacific culture and the style of the painting of the face is found only in the art of this culture area. In the ears, the shading of the lines and the eccentricity of the figure are particularly characteristic.

This pictograph was probably made in honor of an individual or family and certainly has to do with great wealth as the representation of even one "copper" would refer to considerable wealth.

"Coppers" were represented in various ways on this coast. A board or form made of boards fastened together was shaped like a "copper" and this was sometimes both painted and carved. Paintings of "coppers" were made on leather and stone as well as on wood. Pieces of shell were cut to the proper form and carved, and "coppers" are also indicated by pecked figures of the same unique form made on rock surfaces.

The antiquity of this pictograph is unknown to us. A number of white people and a few Indians of the vicinity were consulted in regard to this but those who knew the pictograph said it had been made long ago and that they had no knowledge of who made it or what it meant. However, it is quite likely that there may be some Indian still living who knows when it was made and all about it. The knowledge of its meaning among Indians of this region is likely to be a family secret.

Its preservation as a provincial or national monument would seem well worth while, especially because it can be seen from the railway. It can also be visited from boats on the river.

There is another group of pictographs in a similar situation, a mile upstream from this one. It is a short distance below the site of Aberdeen, which was one of the oldest, if not the oldest, regular boat landing and the location of perhaps the first salmon cannery on the northern coast of British Columbia. To be more exact, these pictographs are on the more or less vertical, jagged, granitic cliffs, and on the fragments fallen from them, from near

the high tide line up to perhaps thirty feet above it, about fifty feet north of the Canadian National Railway track and plainly visible from a passing train. They are about opposite the fourth telegraph pole east or upstream from the 91st mile post, or about 2½ miles east from Tyee. The telegraph wires again cross the track at this point. Some of the pictographs are protected from the weather by overhanging rock.

The pictures appeared to me to be in the same shade of red as most of the pictographs of British Columbia. They are crude and scattered. A number of motion picture stills were taken of them for the Victoria Memorial Museum. Among these red pictures are rows of dots, and two simple faces, but I was able to make little of them.

VICTORIA MEMORIAL MUSEUM,
OTTAWA, CANADA

DIFFUSIONISM WITH A DIFFERENCE

By S. H. Hooke

(Editor's Note. This contribution has been transmitted by Professor Elliot Smith as a fair exposition of his point of view.)

AN IRONIC observer might find food for amusement in the reflection that so trivial a thing as a word, a puff of breath, may have power to stir a generation or a people to frenzy, while the same potent word uttered a century later in the same market-place will cause no more than a vacant stare of non-comprehension.

In Constantinople, in the 4th century of this era, a wise man under the hands of his barber would be chary of uttering the potent word "*homoonsion*" lest an iota less or more should move the gentleman with the razor to untimely and regrettable action.

Today in anthropological circles the apparently harmless word "diffusion" has potency to call up spirits from the vasty deep of scientific consciousness. It may produce scornful laughter or apoplectic rage. Half a century hence it may be as dead as the magic word which had power to set the empire of Constantine by the ears.

Yet it only means "spread." Diseases spread; weeds spread; rumor, that lying jade, spreads; all bad things no doubt. But knowledge spreads; inventions spread; habits spread. The spreading of all these is a matter of daily observation and of historical record. The manner of spreading differs, and may be studied, controlled, stimulated or repressed.

But there are diffusionists and diffusionists. A brief examination of two contrasted methods of dealing with the phenomena of distribution may yield further cause for ironic reflection.

Dr. Clark Wissler has recently brought out a book called *The Relation of Nature to Man in Aboriginal America*. The book has its own merits, which reviewers have already pointed out. But, to put the painful truth bluntly, Dr. Wissler is a diffusionist. We find him "in the very act." He inquires without fear of conse-

quences, although he jests about losing his union card, into the diffusion of all sorts of things, both in the sacred area of America, and in the less favored regions beyond. He inquires into the spread of things so varied as methods of arrow-release, mocassins, ritual dances, and blue eyes. He has clearly, and with his eyes open to the enormity of his offence, written himself down a *diffusionist*. But he wears his rue with a difference. There are operators on a larger scale. Where he is content to steal the spoons there are more dangerous criminals who would steal nothing less than the title-deeds to the property. With their methods we shall deal later.

It is a little unfortunate, perhaps, that Dr. Wissler should preface his study of diffusion-patterns by the rather ambiguous sentence:

> There is an old saying that to progress in science one must be universally naive, or to state the case otherwise, nothing must be taken for granted.

This definition of naiveté as a state of general scepticism is curious, but at any rate Dr. Wissler's scepticism is not so thorough as he would have us believe. He begins by assuming the geographical isolation of the New World under primitive conditions. In his own words:

> Under primitive conditions contact with the Old World population was restricted to the Alaska-Siberian connection, which would place man, once he reached the New World, in a position of isolation.

He goes on to describe the New World as

> a world of naturalistic men who achieved what they did in splendid isolation.

This may be naive, but it is certainly not the attitude of scientific scepticism which the author lays down as his guiding principle. Moreover, it is an assumption which at the outset begs one of the largest questions of diffusion, the question of the origin of the Mayan, Peruvian and other cultures. The view that the source of these civilizations is to be found in an eastern movement of culture from the Old World through Indonesia and the Pacific Islands to the Americas may or may not be accepted, but it is certainly supported by too large a body of evidence to be ruled out without discussion by the assumption of the isolation of the New World save by the Alaskan route. This preliminary assumption

leads to the further assumption that the New World provides us with a heaven-sent opportunity for observing the development of civilization *ab ovo*.

If one looks deeply into the subject, he will see on every hand proof of the gradual political evolution of village units into federations and ultimately into military despotisms. Perhaps nowhere else in the world can this evolution be so easily followed, step by step, as in aboriginal America.

One is reminded of the jesting of Erasmus with Sir Thomas More. The latter had stoutly defended transubstantiation against the sceptical logic of Erasmus. When Erasmus left his host to return to Holland, More lent him a horse to take him to the ship. The horse was not returned and in reply to More's expostulations Erasmus sent the quatrain:

> Of Christe's body you have to me declared the creed
> Believe you have it and you have indeed.
> Apply this doctrine to your missing steed,
> Believe you have it, and you have indeed.

This is naiveté in diffusionism with a vengeance. The whole question of the elaborate civilization of the Maya and their successors, of the social structure which it exhibits, of the origin of warlike behavior, and many other difficult problems of diffusion, are begged by the simple expedient of assuming the cultural isolation of the New World.

We come next to Dr. Wissler's method of dealing with the phenomena of distribution. This involves a third assumption, but this time Dr. Wissler frankly announces his intention of making this assumption by way of the usual scientific method of hypothesis. The assumption in question consists in the assimilation of cultural distribution to geological stratification. Let us take Dr. Wissler's description of this hypothesis.

Let us assume that the distributions for human traits are found in patches and that these patches overlie each other as do strata, and then proceed with sample distributions, to demonstrate the truth or falsity of this assumption.

Further, we may assume that these stratigraphic relations between distributions are indicative of time relation, or that wide outlying distributions are criteria of age. According to this hypothesis it would follow that a distribution of narrow range may be suspected of being an innovation, whereas one of wide range would be of respectable age. These hypotheses also may be right or wrong, and so should be checked against data of known age, or be tried out to determine their consistency in the face of other facts.

Dr. Wissler is of course perfectly free to make any hypothesis which may seem to him to lead to a fuller insight into the nature of culture distributions. But analogy is an extremely dangerous ground upon which to base an hypothesis, especially when the matters compared differ so widely. There is, of course, no question concerning the extremely valuable results which archaeology has obtained from what may be called the stratigraphical method of excavation. But in this case we are dealing with the actual superimposition of successive layers, each representing a different stage of culture. Nothing resembling such a definite and concrete basis for the calculation of time relations can exist in dealing with even simple material distributions such as ceremonial axes or tubular-handled pots, far less when we come to such complex phenomena as a sun-dance or the myth of a dying God.

The fact is that Dr. Wissler's treatment of culture distribution is vitiated throughout by over-simplification. The spread of the infinitely various elements of any mode of community life sufficiently advanced to be called a culture cannot be reduced to a simple formula such as Dr. Wissler's. It is perfectly true that when once any given element in a culture complex has arrived at or originated in a particular locality, its subsequent spread may assume a radiating pattern capable of representation on a map as a series of concentric circles. But this specious aspect of simplicity conceals the really important problems left wholly untouched by Dr. Wissler's short way with diffusion.

A couple of illustrations taken from Dr. Wissler's "samples" will serve to make clear the issues raised. One of the first culture-traits selected for representation on a distribution map is the *ball-game* played in various ways with varying implements in different parts of the New World.

Dr. Wissler proceeds to plot out the distribution of different types of implement, and arrives at certain conclusions with regard to the relative age of the different types. But if we step out of Dr. Wissler's magic circle and escape from this artificial simplification we find ourselves faced with facts which lead us to the heart of the central problem of diffusion.

We find that the apparently insignificant ball-game is no isolated material culture-trait, but is a symbolic act forming part of a culture-complex whose distribution is world-wide. Even in the area selected by Dr. Wissler we find that the ball-game is connected with the social structure of the North American Indian, that it is enshrined in his mythology; it is played ceremoniously by his culture heroes, and is even found in his sky-world. But we go on to discover the ball-game on the monuments of ancient Egypt, among the Australians, the Polynesians, surviving in seasonal ceremonial games in medieval Europe and even to the present time. It is perfectly clear that we have to deal here with a problem far too intricate and widespread in its ramifications to be solved by Dr. Wissler's simple formula.

Let us examine one more of Dr. Wissler's samples of distribution. The most fully discussed example taken from the "social traits" is the Sun Dance. Dr. Wissler takes Dr. Spier's analysis of the Sun Dance into 82 component elements. He remarks in passing that "objectivity" of treatment is secured by giving equal weight to each element. He then tabulates the tribes possessing a Sun Dance according to the number of elements each exhibits, and finds that by geographical distribution the tribes furthest from the center occupied by the Arapaho exhibit the smallest number of elements. He next tabulates the elements according to their occurrence and finds that the elements which have the widest distribution are the most basic. It is true that the argument is obviously a circular one, but it does not seem easy for Dr. Wissler to avoid a circle.

Now whether we consider the Sun Dance as a whole, a seasonal ceremony connected with the summer buffalo hunt, or whether we examine its constituent elements separately, we find that the problem which faced us with regard to the ball-game as soon as we left the circle faces us here far more acutely. On the one hand we find that the Sun Dance is but one interesting example of a type of human behavior as widely distributed as the ball-game and ought not therefore to be artificially isolated from the great number of similar ceremonies when the question of distribution and its significance is discussed. We cannot obtain a true pattern

of its distribution, supposing such a thing is possible, by treating it in isolation. On the other hand, when we examine the elements of the dance we find that most, if not all of them, form parts of other ceremonies in other parts of the world. Some like the polo and the self-torture are familiar enough to all. Other less familiar elements are the white paint, which we find in the initiation dance of the Curetes, so brilliantly described by Miss Harrison. The drumming on the hide finds a parallel in the ancient Babylonian ritual of the *lilissu* drum covered with the hide of the sacred bull.

Space will not permit the study of further instances of Dr. Wissler's treatment of the spread of culture-traits, and we may proceed to summarize our conclusions concerning Dr. Wissler's methods and results.

First of all he had assumed the cultural isolation of the New World during the process of building up those cultures which archaeologists and anthropologists are now studying.

Secondly, he has carried his process of isolation still further by separating material traits such as stone axes, and social traits such as the Sun Dance, from the larger culture-complex of which they form a part and which extends over the whole of the Old World.

By this artificial isolation he produces an appearance of objectivity and simplicity of treatment, but in actual fact succeeds in sterilizing the whole treatment of distribution. His mechanical technique is too narrow and inadequate to yield any real light on the great problems of the growth of the main culture-systems of the world. His results have no light to give us on the remarkable resemblances between the culture systems of the New World and those of the Old, and especially on the problems of degradation and disappearance of culture-traits.

Dr. Wissler meets this last problem in his treatment of the Sun Dance and acknowledges that his concentric circles tell us nothing about it.

Dr. Wissler's short way with diffusion is not, however, the only way, and we shall now go on to contrast with his results the work of other modern anthropologists who have made use of the concept of diffusion and the valuable adjunct of distribution-maps.

As a point of departure for our contrast let us take Mr. Gordon Childe's summary of his method and results in the Epilogue to his brilliant book *The Dawn of European Civilization*. He says:

> with the arrival of the bronze age invaders in Britain the process of *cultural diffusion* (italics are mine) to which the first foundations of Western civilization were due may be said to be complete. . . . . The several stages of the transformation of the world of food-gatherers with which we began in Chapter I to this state of civilization are shown diagrammatically in Maps I–IV. On the last map the distribution of Irish gold-work, German halberds, Cypriote daggers, and amber beads illustrates some of the commercial trade-routes by which the regions of bronze age Europe were united. The same diagrams reveal the centres of higher life from which civilizing influence radiated. In the Aegean, Egyptian and Sumerian inspiration created a truly European civilization.

He also speaks a few lines further on of the "westward diffusion of East Mediterranean achievement."

Mr. Childe is not afraid of the word "diffusion," and it is instructive to compare his maps and their complex distribution-patterns with the artificial simplicity of Dr. Wissler's maps. This is diffusionism with a difference. The book indicates the exceedingly valuable results of the study of distribution of artifacts applied to the problems of the growth of European civilization.

But Mr. Childe's work deals only with a particular area, and does not include in his investigation the spread of ideas, theories, and institutions which are inseparably bound up with those artifacts whose distributions he depicts so admirably.

Mr. W. J. Perry in his book, *The Children of the Sun*, following the same method, the study of distributions, but including in his survey and in his most illuminating maps, not only artifacts but the institutional elements with which they are connected has done upon a world-scale what Mr. Childe has done for European civilization. The very largeness of the scale renders impossible the convincing minuteness of Mr. Childe's treatment. But Mr. Perry has built up a massive and cumulative argument for the world-wide diffusion of the same East Mediterranean influence that Mr. Childe has demonstrated for Europe. In his book, by the application of those same methods which Dr. Wissler has made

such inadequate use of, the outlines are presented to us of an orderly and intelligible plan exhibiting the parentage, lines of descent, and distribution, of a great cultural complex in which widely sundered customs, institutions and types of behavior are found to have their roots, and the explanation of their family resemblances. Within this plan there falls into the natural place the explanation of those phenomena of degradation and loss which more limited methods fail to explain.

Every one who has ever had occasion to attempt to hunt down some particular custom or ritual to its sources must have become painfully aware of the enormous and crushing mass of anthropological data that missionaries, explorers, civil servants, and scientists have slowly accumulated during many years. Many valuable and brilliant results have been achieved by applying to various groups of culture facts such psychological and sociological theories as are represented for instance by the *Année Sociologique*. But it is only within the last few years that, through the study of the history, motives and trend of culture-diffusion, the main outlines of the great process of the growth of civilization begin to stand out clearly.

There is no necessary incompatibility between the study of diffusion as exemplified in the work of Professor Elliot Smith, Mr. W. J. Perry, Mr. Childe, Mr. Hocart, and other scholars who are working on similar lines, and the application of psychological, sociological or functional theories to particular problems that arise everywhere in the vast field of anthropological studies.

Nevertheless, as Dr. Wissler recognizes, the very word "diffusion" has a sound of evil omen, and seems to have power to stir up a bitterness even more intense than the now almost extinct *odium theologicum*. It may be of interest therefore, in concluding, to draw a parallel from a field of studies not very remote from anthropological inquiry.

About forty years ago Westcott and Hort began to set forth the results of their life-long studies on the text of the New Testament. From the Lays of Erasmus onwards orthodox customs had regarded uncials and cursives as more or less of equal authority, regardless of their history and lineage. Sheer numerical pre-

ponderance was the decisive factor in determining the value of different readings. Upon this method the Textus Receptus, which was practically regarded as inspired, was based. Westcott and Hort applied to the vast mass of MSS, which the labors of many years had made available to scholars what may quite accurately be described as the historical method. They found the main lines of diffusion of the various types of MSS and established broadly the parentage of these types. The result was a revolution in textual criticism. The new method and its results were received with scornful laughter and hysterical rage. A witty opponent applied the W-H method to the text of "to be or not to be," and, relying on Codex B, produced "ToB OR NOT ToB" as the true text. The curse against those who should add to or remove from the sacred text was generally invoked. Today their results are the basis of the extraordinary progress that the textual criticism of the New Testament has achieved. Many of their conclusions have been corrected, but their method is the only accepted method of treatment today. It is also interesting to remark that a favorite objection was that Westcott and Hort were not genuine palaeographers, they had discovered and deciphered no MSS, they were second-hand workers, relying on the results of others.

The parallel is interesting in many ways for MSS are a particular type of artifacts, like clay-tablets and cylindrical seals, or even pictographic pebbles, and call for the application of similar methods of treatment. And it is in the application by the "diffusionists," as they are called, of the same methods which Westcott and Hort applied to the accumulation of New Testament texts, that has begun to bring order into the vast mass of social customs and traditions, presenting such baffling similarity in difference.

The question of the Egyptian origin of the main types of culture which have held sway in the course of centuries is not more germane to the question of the ultimate soundness of the method than was Westcott and Host's predilection for Codex B to the main outline of their historical treatment of MSS.

The real value of Codex B, a very great value, has long ago been settled, and its rank among the other great uncials assigned

to it, while the method, which led to Westcott and Hort to assign to it the value which they did in the light of the evidence available in their time, has been so completely vindicated that it is not now even a matter for discussion.

So fuller knowledge will ultimately bring clearer understanding of the precise relation of Egyptian to Cretan and Sumerian culture. But the value of the historical study of diffusion stands supported by too massive a weight of argument and achievement to be laughed out of existence. *Fas est et ab hoste doceri.*

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COAST AND HIGHLAND IN PREHISTORIC PERU

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A SECOND expedition to Peru in behalf of Field Museum of Natural History, undertaken in 1926 in association with W. Egbert Schenck, resulted both in the determination of certain specific facts and in the obtrusion of problems. One of these problems is that of the relation of Coast and Highland in the history of pre-Columbian culture in Peru, and is so fundamental that a review of its status seems desirable. Some of the specific determinations made by the expedition attach to this problem and will be summarized in the development of the argument. The full results of the expedition will be issued from Field Museum, by permission of whose Trustees the present discussion is published.

I

The foundations of scientific archaeology in Peru were laid by Max Uhle. As a result of his work at Tiahuanaco in the Bolivian highland,[1] he formulated the distinction between an Inca or more or less historic culture and a prehistoric, perhaps Aymara, or Tiahuanaco culture, as shown in style of monuments, sculpture, ceramics.

Subsequently, at Pachacamac, on the coast near Lima, he found[2] certain potteries and textiles showing a strong influence of this Tiahuanaco style; other objects, in which this same influence seemed to persist in some degree, although weakened and simplified, and to which he gave the name Epigonal, that is, "following upon" or "derived from" Tiahuanaco, with an implication of breaking down or decadence; further, cemeteries of objects characteristic of the coast, free from Tiahuanaco or Epigonal elements, in some cases showing a degree of Inca influence; and finally, graves which contained only Inca (Cuzco) or Incaized objects. These groups, on the basis of the previous Inca-Tia-

[1] Stübel and Uhle, Die Ruinenstaette von Tiahuanaco, Leipzig, 1892.

[2] Uhle, Pachacamac, Univ. Penn., 1903.

huanaco discrimination, yielded a stylistic seriation reasonably translatable into terms of time; and this time sequence Uhle was able to confirm by a stratification in the soil.[3] This stratification was of graves and structures and therefore hardly as incisively conclusive as a pure refuse stratification of sufficient area, depth, and content. But refuse stratifications are either unusually rare in Peru or we have not yet learned the technique of finding them. Uhle's discovery of a grave stratification was therefore a valuable one, especially as it was the first stratification of any sort authentically reported from Peru. It should be mentioned however that Tiahuanaco and Epigonal objects occurred in the same graves—a fact which does not vitiate the separateness of the two styles as styles, but certainly makes them, at least for Pachacamac, contemporary in period. The facts are stated by Uhle in his monumental memoir[4]; but so incidentally, that they have been generally overlooked; and in subsequent publications he has treated of Tiahuanaco and Epigonal periods as well as styles.

This much however was clear: there existed on the coast at least three successive eras or phases of culture: Tiahuanaco related, local post-Tiahuanaco, and late Inca.

In his next expeditions, undertaken both on the northern and southern coast, Uhle pushed farther, to pre-Tiahuanaco. In this case direct stratificatory evidence was lacking, but the stylistic materials abundant. These are embodied in his Proto-Chimu and Proto-Nazca cultures, or Early Chimu and Nazca, as it seems better to call them, since "Proto" conveys the idea of "previous" rather than "early," of a rudiment which has not yet developed, whereas both Proto-Chimu and Proto-Nazca are cultures in the full flower of their particular tendencies.

On the northern coast, Uhle showed[5] that one form of Chimu culture, characterized by prevailingly black pottery, typical of Chanchan, is associated in graves with Inca objects, and therefore Late; whereas another form, whose pottery is prevailingly colored or red, as at Moche, is never associated with objects that show

[3] Ibid., 19; also, Am. Anthrop., n.s. 4: 753–759, 1902.
[4] Pachacamac, 22.
[5] Die Ruinen von Moche, Journ. Soc. Amer. Paris, n.s., 10: 95–117, 1913.

either Inca or Tiahuanacoid manner, and is therefore Early and presumably pre-Tiahuanaco. This last conclusion was strengthened by the discovery of one site at Early Chimu Moche containing burials of vessels with clear Tiahuanacoid relations but unassociated with either specifically Early or Late Chimu ware, and therefore presumably representing an influence intrusive between these two styles. This intrusive character was also suggested, even if not definitely proved, by the position of the Tiahuanacoid cemetery on part of an Early Chimu structure, the Pyramid of the Sun.

In the south, Uhle found in situ two cultures previously represented only by scattering objects and scarcely recognized by science: those of Ica and Nazca.[6] Each occurs in some degree in both valleys, fortunately for interpretation, although the nomenclature upon which usage has settled reflects the local preponderances. The Nazca style is a highly developed and individualized one, as much so as Early Chimu, though in quite different directions, and quite as free from Tiahuanaco influence. The Ica style occurs in several different phases, aside from local variations. One of these shows a degree of Tiahuanacoid influences; another is free from these, with all the appearance of a well settled and conventionalized provincial style; the third shows a greater or less degree of Inca influence or admixture. So here again there was indication of the time sequence: pre-Tiahuanaco; Tiahuanaco; post-Tiahuanaco; and Inca.

Uhle next attacked the central coast, and at Cajamarquilla and Aramburú in the valley of Lima found wares and structures which he called Proto-Lima,[7] though Early Lima is perhaps the better designation. A related style appeared at Chancay, dissociated physically from the Epigonal and the Late Black-and-White styles of that valley. These new styles showed certain Nazca resemblances, though not very close ones, on the basis of which Uhle derived them from Nazca and placed them temporally

[6] Journ. Soc. Amer. Paris, n.s., 10: 341–367, 1913; Intern. Congr. Amer., XIV, Stuttgart, 1904, 567–579 and 581–592, 1906; Proc. Davenport Acad. Sciences, 13: 1–16, 1914; Univ. Calif. Publ. A.A.E., 21: 57–94 and 121–132, 1924.

[7] Frühkulturen in der Umgebung von Lima, Intern. Congr. Amer., XVI, Vienna, 1908, 347–370, 1910; Univ. Calif. Publ. A.A.E., 21: 293–303, 1926.

near this and before Tiahuanaco. An association, especially at Cajamarquilla, with Tiahuanacoid objects, he explained as a tail-end contact of Proto-Lima with the first arrival of Tiahuanaco influences. However, his case for pre-Tiahuanaco is weaker for Early Lima than for Chimu and Nazca, because there seems to be at least as much Tiahuanaco and Epigonal as Nazca constituent in "Proto-Lima."

Elsewhere on the central coast, at Ancon and Supe, Uhle found settlements of rude-cultured fishermen, with incised ware in place of the painted ceramics usual in Peru.[8] The collections were unmixed, and he therefore interpreted them as also pre-Tiahuanaco, in fact as being primitive in time as well as in manner, and suggested their temporal equation with earliest Nazca, the central coast having lagged behind both the south and the north in stylistic development. However, the collections are quite small and their dissociation from other Peruvian material too complete, so far as they present definite characteristics at all, to render their positive placing in relative or absolute time free from a speculative element. My present impression is that this crude material is about as early as Uhle believes; but a possibility must be admitted that its "primitiveness" is the result of the mode of life of a social group rather than of a period.

The same restriction probably applies also to crude material found by Uhle in the far south, about Arica, and in northern Chile, and interpreted by him as early[9]; but I am not personally familiar either with the region or the material.

Still later, Uhle went on to connect Peruvian styles and cultures with those of Ecuador, of Central America and Mexico,[10] and finally even those of the United States,[11] in a broad but specific scheme. These views fall outside the scope of the present review. It is well to realize, however, that any weakness which may inhere in them does not necessarily reflect on Uhle's Peruvian interpretations. His Peruvian interpretations rest on stylistic

[8] Frühkulturen; also, Intern. Congr. Amer., XVIII, London, 1912, 22–45, 1913.

[9] Bol. Soc. Ecuat. Estud. Hist., Quito, 3, 1919 (2nd edition, 1922).

[10] For instance, *ibid.* (or Bol. Acad. Nac. Hist.) 4, no. 9, 1–6, 1922; 4, no. 10, 1=36, 1922; 7, no. 18, 1–33, 1923.

[11] Intern. Congr. Amer., XXI, II, Göteborg, 1924, 673–698, 1925.

resemblances, indeed, but coupled with objective facts of association and non-association; his Pan-American ones, on stylistic resemblances alone, so that their subjective constituent is immensely greater.

With one exception, leaving aside fantastic interpretations resting only nominally on evidence, the Uhle scheme for Peru has been essentially accepted by other students. Joyce,[12] for instance, and Jijón y Caamaño[13] largely follow it. Means[14] has a scheme of his own, which, however, is that of Uhle with certain modifications, such as making the beginning of Early Chimu contemporaneous with Nazca, and distinguishing a Tiahuanaco I and II. The first of these points is non-integral to the scheme, since the available evidence as to the time relation of Early Chimu and Nazca is indirect, a matter of their association to other cultures and not to each other.[15] As to the two Tiahuanaco styles, Means does not succeed in making their difference clear, because his I remains vague; and he certainly does not found the distinction in associational evidence. He does appear, nevertheless, to have touched an important point in this distinction, which will be reverted to shortly. Otherwise, however, his interpretation mainly rests on Uhle's. I must be ranged in the same class. For instance, I recently arranged the known pottery styles of Peru in the scheme: pre-Tiahuanaco; Tiahuanacoid; post-Tiahuanaco and pre-Inca; Inca.[16] My departures from Uhle consisted largely of a lesser certainty as to the place of certain styles, and a doubt,

[12] South American Archaeology, London, 1912.

[13] Puruha, Bol. Acad. Nac. Hist. Ecuador, 3: 1–60, 1922, 6: 32–66, 1923.

[14] A Survey of Ancient Peruvian Art, Trans. Conn. Acad. Arts Sciences, 21: 315–324, 1917.

[15] My inclination is to follow Uhle in seeing Nazca earlier for such reasons as these: Nazca uses only hand-made rounded adobes, Early Chimu rectangular form-made ones scarcely distinguishable from Late Chimu adobes. Nazca pottery is succeeded in its area by wares that contain few of its elements, and those all made over quite thoroughly. Early Chimu and Late Chimu however have many elements in common with only minor change, such as the predominant stirrup mouth. A large enough mass of such considerations all running the same way may make for a high probability. The essential point, however, is that they reflect merely opinion, however well founded—like that on the primitiveness of the Ancon-Supe fishing culture—and are therefore in a different domain from evidence such as a fact of association.

[16] Univ. Calif. Publ. A.A.E., 21: 231, 1925.

expressed with Strong, that Epigonal is really subsequent to Tiahuanaco, but that rather it may be in part anterior to it.[16a] In a recent letter, Uhle accepts this modification as one he has held for some time. It is thus clear that so far there have been no very important deviations from the interpretation of Peruvian culture development as gradually built up by Uhle.

The Uhle scheme possesses a number of important merits. First of all, it sees problems and attempts to solve them by evidence. This may seem as generic and pallid a virtue as honesty. But in the prevalent condition of the so-called archaeology of Peru, not only formerly but today, it is a distinction of a high order, and its consequence is that however much the Uhle results may in time be modified as a whole or in detail, they will always remain the foundation of our understanding of Peruvian culture development. Second, the scheme possesses a fundamental clarity of concept, even though this is often enough overlaid with an obscurity due to the struggle to present effectively a mass of evidence consisting largely of detail unfamiliar to others. Third, the interpretation proceeds step by step from the better to the less known, from historic Cuzco and the Incas to legendary Tiahuanaco, next to the filling of the gap between them, then to what came before. Fourth, while concerned throughout with styles, which may be criticizable as only subjectively defined when they pass beyond the obvious, it does deal wherever possible with the objective facts of their association. Finally, it rests primarily on the evidence of pottery because this is fullest, but supplements it with data on textiles, structures, carving, and head and burial form wherever possible.

The basic weakness of the Uhle scheme is in its limitation of knowledge. It gives an explanation of the relations of most of the coast cultures—all of the better known ones—and of the two highland cultures of Cuzco and Tiahuanaco. It leaves the remainder of the highland—two-thirds of Peru in population today and probably in antiquity—essentially out of account. In short, it is not an interpretation of the culture history of Peru. It is an

[16a] Univ. Calif. Publ. A.A.E., 21: 118, 120, 1924.

interpretation of the ancient culture of the Peruvian coast, with two highland forms of culture used as markers to register the scale of what happened on the coast.

With the coast only partly explored and nine-tenths of the interior scientifically wholly unknown, any scheme of reconstruction of Peruvian culture development must be considerably one-sided and provisional.

There are of course reasons for this enormous deficiency. Transport, always a problem in Peru, is much more arduous and time-consuming in the highlands. An expedition limited in time can hope to accomplish twice the results on the coast. The whole tactics and technique of archaeology are different in the highland. Instead of artifact-laden cemeteries signalized by proximity to conspicuous huacas, there are graves scattered in mountain sides and valley, in small buildings or in caves or in the open. Except in caves, there is little hope of their containing textiles or perishable objects. Private and commercial collectors have made little progress in exploiting the highland, in spite of the national habit of huaqueroing and being aficionado, because exploitation is difficult. Uhle, after his Tiahuanaco study, made several attempts to work at interior points—Huamachuco, Huaitara, Cuzco—but with slender results. He might have done more had his work in the country not been cut off by circumstances beyond his control.

II

The credit of being the first to take into active account the great blank in our knowledge of the interior, and to correct it, belongs to Tello. Himself a highlander, he absorbed, from childhood on, impressions of native life, many of them persistences from pre-Spanish times, which he was able to put to archaeological use. He traveled widely over the country; and he conducted at least one careful expedition into the interior which is among the most important in Peruvian archaeology. Starting from Huarmey on the north central coast, he went up the river to Aija, crossed the Black Sierra into the Callejón de Huaylas of the upper Santa, the one longitudinal valley of Peru draining into the Pacific; then crossed the White Sierra, and from Chavín de Huántar, above

the Marañon, a site previously visited and cursorily described but never studied, brought back precious sculptures and data.

Tello's general scheme of interpretation, which is the one serious attempt not founded essentially on Uhle's, is based on the concept of a highland origin of Peruvian culture so far as Peru is concerned. This early form he calls Archaic Andean, which might be translated Early Highland,[17] and tends to focus in the north, in the region of Chavín and the Callejón. As to how far it originated there or in regions north of Peru, he leaves open, being concerned with developments on Peruvian soil. This Early Highland culture spread over the whole Sierra and ultimately Coast, developing into higher forms first at Chavín, then in the Tiahuanaco, Nazca, Chimu, and other areas. The Epigonal culture as found on the Coast is only a later phase of the same Highland irradiation. At times this irradiation weakened and the local Coast cultures developed peculiarities of their own; but only to be reinfluenced by a last Highland influence, that which produced the Cuzco or Inca form, whose specific origins are not clear but may trace back to the forested Montaña east of the Sierra.

Two examples will illustrate the Tello point of view. The Nazca culture divides into two phases. These phases may have been recognized by Uhle but were first described by Tello.[18] One, which he calls Pre-Nazca, is characterized in its pottery by elaborate flamboyant or distorted designs, recognized by Seler as conventionalized demons or deities,[19] and explained by Tello as reductions of a feline deity more or less universally represented in the highlands from an early time—that of Chavín if not the "Archaic."[20] This style gave way to the proper Nazca, in which the same cat god was represented in more naturalistic manner. Nazca in turn was succeeded by Tiahuanaco and Inca, admittedly

[17] Andean is open to the objection that for non-Peruvians the word refers to the mountain system from Colombia to Chile, and is habitually so used, in anthropology as well as geography and geology. Archaic, which in Spanish refers essentially to time, implies in English also a primitiveness of quality.

[18] Los Antiguos Cementerios del Valle de Nazca, 2nd Pan-American Scientific Congr., Washington, 1915, 1: 283–291, 1917.

[19] Gesamm. Abh., 4. 169–338, 1923.

[20] Wira-Kocha, Inca, 1: 93–320, 583–606, 1923 (especially 583–590).

coming from the interior. The Ica (or Chincha) style is recognized as only a local variant of Tiahuanaco and Inca. Some of its phases again contain the cat god, who appears also at Tiahuanaco; others contain admixture with Inca objects or blends of the Ica and Cuzco styles.

On the northern coast, Tello recognizes Early and Late Chimu under the names of Mochica and Tallán (or Chimu). He makes them continuous instead of separating them by a Tiahuanacoid intrusion; but derives Early Chimu from Early Northern Highland and Chavín. The handled small-mouthed "dippers" of Early Chimu have their prototype in similar forms, derived from gourds, in Early Highland. Certain stirrup-mouth vessels from the Early Chimu area are ornamented in relief in a style closely similar to that of the sculptures of Chavín. Tello was the first to recognize and describe the type and its Chavín resemblance, which is indubitable.[21] Other Early Chimu vessels bear the figure of a crested animal or derivations from it. This animal—again the feline deity or related to it—is found in full development in sculptures and pottery painting of the area of the Callejón—the so-called Recuay ware. Early Chimu is therefore to be led back to an earlier Northern Highland source.

The Tello interpretation has its most immediate weakness in a lack of documentation by published data. Apart from special articles, his views are set forth in an Introducción[22] and in Wira-Kocha.[23] The Introducción, a pamphlet, gives a synthetic view, clear almost to the point of being schematic, but, in the avowed preliminary nature of the sketch, without analysis of evidence. Wira-Kocha, an unfinished long article in "Inca," is more detailed, but its primary aim being an interpretation of mythology and symbolism, it can present its archaeology only piecemeal, without reference to itemization of associations in individual graves, and the like. These remarks are not strictures on Tello's intent or capacity. He had first a long up-hill battle to be able to pursue archaeology scientifically at all; and since then responsibility for

[21] Introducción a la Historia Antigua del Perú, Lima, 1922: p. 27, pls. 8–12.
[22] See footnote 21.
[23] See footnote 20.

a University department, an important journal, and for the new Museo de Arqueología Peruana, a national museum containing far and away the largest and most valuable collection of Peruvian antiquities ever assembled. There has been field work to do; and there has been little call from Peru or abroad for the tedious task of publishing technical data.

At the same time, whatever the causes, the lack of documentation is unfortunate, especially in view of the revolutionizing character of the scheme. Also, the scant statement tends to misunderstanding. Thus, Tello speaks of the Nazca area showing a "stratification" into Pre-Nazca, Nazca, and Tiahuanaco-Inca. Work on the spot by his side in 1926 revealed that stratification meant not a physical superposition but a typological segregation. In the same way, it remains unclear how far the distinction between the northern Early Highland and Chavín horizons is based on associations or on typology. In fact, it is largely the opportunity to discuss concrete material with Tello in the field, in museums, and in collections, during cooperative work for several months, that has impressed on me the strength of many of his contentions.

The following are some of the conclusions that he may be considered as having established or rendered probable, or which I have been led to adopt as revisions or amplifications of former views in consequence of his arguments.

Highland culture on the whole seems more stable and less subject to local variations than that of the Coast.

"Epigonal" is one widespread form of this generic Highland culture. The classic Tiahuanaco is a particular phase or local culmination, perhaps a relatively late one. Means' Tiahuanaco I may or may not represent another phase.

The Three-Color Geometric pottery style, Uhle's Red-White-Black recorded from Pachacamac, Ancón, Chancay, Chimbote, Moche,[24] all on the coast, is probably Highland derived.[25] Its fundamental design element, the rectangle or triangle containing

[24] Univ. Calif. Publ. A.A.E., 21: 272, n. 18, 1926; Field Museum Anthr. Mem., 2:31, 1926.

[25] Means's Red-White-Black is or includes Recuay: op. cit., 371.

a dash or dot, and its fundamental pattern arrangement, the step, seem Highland.

The Early Lima style, Uhle's Proto-Lima, contains a predominant Highland element. This applies as well to design as to modeling and fanciful forms. There is a Nazca constituent also, but it is minor.

Middle Supe[26] is largely Highland, only in part of the Epigonal or Tiahuanaco form. Even the Chimu strain in Middle Supe may have been received by way of the Highland or been modified by influences from it. Much the same applies to closely related Middle Ancón.[27]

Of particular form elements, both the flaring, curled-out jar mouth and the longish tapering spout, are Highland. They do not seem specifically Epigonal. The Coast spout, both Early Chimu and Nazca, is tubular. Late Chimu shows all three forms, evidently due to the persistence of the Early Chimu cylindrical shape alongside the two incorporated Highland conical forms.

The double-spout with bridge has a Nazca form, in which the spouts are short, cylindrical, and parallel, and a second form with long, tapering, and spreading spouts. It has been usual to regard the latter as a northern development out of the earlier Nazca form. It seems much more likely to be a Highland form, which was intruded, along with cylindrical goblets, bird jars, and so-called Tiahuanaco designs, into the Coast cultures from Pachacamac to Supe, and became embodied in the north in Late Chimu. It is even occasionally found, with typical Highland treatment of design, at Nazca. Whether this Highland type or the true Nazca type of double-spout is the earlier, there seems no present means of deciding.

A small horizontal spout is common in Callejón (Recuay) and occurs at Nievería and Pachacamac. It appears to be a Highland device.

The bridge connecting two spouts, or a mouth and a figure, is very widespread and obviously early, as in Nazca double-spouts and Early Chimu double jars. It is highly characteristic of

[26] Univ. Calif. Publ. A.A.E., 21, pls. 71–78, 1925.
[27] Strong, *ibid.*, pls. 44–47, 1925.

Callejón ware, even crude pieces, in which figure and mouth stand so close that they could as well have been joined directly if strength were the desideratum, showing a very short bridge, which was evidently an ingrained stylistic habit. Whether, however, the Peruvian pottery bridge is always a derivative from this Northern Highland culture, can only be decided when we shall know more of the relations and age of that culture.

The three-legged bowl, never very abundant in Peru, seems most frequent in the crude "Archaic" of the Callejón area and in a cursively painted style known from scattering examples on the Chimu coast. The latter has been thought to derive from Ecuador or beyond. This may be true as regards ultimate origin, but the form perhaps penetrated the Chimu coast from its immediate Sierra hinterland. Sporadic occurrences elsewhere, as in Early Lima, at Pachacamac, and even in pure Cuzco Inca, may derive from the same or a common source.

A prominent foot on vessels, usually somewhat conical, seems to go back to Highland origin. This foot is lacking in Nazca and Ica-Chincha, occurs in Early Chimu but with a rather inconspicuous development, and is frequent in Late Chimu, usually in combination with tapering spout, double-spout, bridge, or other presumable Highland elements.

The quero-shaped goblet or tall unhandled cup has always been associated with "Tiahuanaco" culture, and is one of the few "Tiahuanaco" or Epigonal elements that actually occur with frequency in the pottery of Tiahuanaco and the Titicaca region. It is probably related in some way to the tall cylindrical vase characteristic of one of the forms of Nazca culture; but, as with the double-spout, there seems no present evidence to determine which of the two is the antecedent. The wide cylindrical goblet of Early Chancay[28] may also be related.

The interlocking fish pattern[29] appears in Early Chancay, Early Lima, the Nazca culture phase just referred to, and in forms decadent to it. In Nazca it appears out of nothing, and stands rather apart from the remainder of the style. This raises

[28] Same volume, 278–282, figs. 10–14, 1926.

[29] *Ibid.*, 279–290, 1926.

the question whether it does not rather represent an injection into Nazca than an original element of this which was subsequently carried to Lima and Chancay, as Uhle argues. The doubt is the stronger in that it is nearly the only Nazca design element cited as having been carried north, and because Early Lima seems to contain a larger Highland than Nazca strain. On the other hand, presupposition would be against a fish pattern originating in the interior; and, as Uhle has advanced, this pattern is almost certainly a textile one transferred to pottery; so that its history remains far from clear.

A characteristic long noted of Recuay (Callejón) pottery is the assembling on one vessel of groups of small modeled figures rather crudely executed but done with some attention to detail. This is a trait not found in the Early Chimu collection of Uhle, the only one extant with data, and therefore the touchstone for the style. It does occur in certain pottery of general Early Chimu character which I have hypothetically separated, on stylistic grounds, as Middle Chimu. It occurs again on Chimu vessels (Cursive Modeled), of different form and texture, whose affiliations seem to be Late. These vessels are cursively painted in a manner similar to that of many of the three-legged bowls of the region, already referred to. These occurrences suggest a Highland origin for the small-group modeling, which later penetrated the Northern Coast, and became conserved in the eclectic Late Chimu style. This small-group modeling of the interior and the larger single-figure or head modeling of Early Chimu must be connected, especially as they occur in contiguous areas at a relatively early time. But what the influencing relation was within the connection is a problem that also needs further evidence.

Smoked blackware is so distinctive and easily observed that it is a convenient criterion for culture relations. I have recently tried to outline its history in Peru on the basis of a comparison of its occurrences.[30] The outline is probably sound for the Coast, but defective in that it covers only the Coast and Titicaca and Cuzco regions. The Northern Highland (Callejón) shows a considerable proportion of blackware, much of it very crude, but

[30] Same volume, 251–254, 1926.

apparently true bucchero. This may be the stimulus of the small percentage of blackware in Early Chimu, which becomes a prevalent proportion in Late: we cannot say more than "may." Tello has recently found blackware on the upper Cañete river. The Chincha (Ica) style at Chincha and Cañete and Pisco contains so strong a proportion of blackware as to raise a doubt whether this blackware can be the result of Late Chimu influencing. At Paracas near Pisco, Tello found blackware in two recently discovered new culture forms which show both Nazca and Chavín affinities. The Nazca style itself proves, on the basis of the excavations of 1926, to contain sporadic bucchero pieces, some with a graphitic surfacing or design occurring also at Paracas. It is evident that the story of blackware will have to be revised, with a larger part assigned in it to Highland occurrences.

The same may be said of pottery incising, though the evidence on this is too fragmentary and involved to make its discussion here profitable.

A minute trait, but of the sort of irrelevance that is often of value in determining connections and distinctions, is the facing of profile figures of men or animals to the right or left. No pottery style is uniformly consistent on this point; but nearly all show a leaning ranging from 2:1 to 4:1. Nazca, Recuay-Callejón, and Chavín designs on Early Chimu vessels normally face to the left; Early Chimu, Chincha-Ica, and all the "Epigonal" or similar Highland-influenced Coast wares, to the right; Late Chimu, in pressed relief, is about in balance. This shows a rather surprising opposition between Northern Highland and Northern Coast, and again between Central and Southern Highland and Southern Coast, with Northern Highland and Southern Coast going together. Ica, as might be expected, follows the Highland strain that entered into it; and Late Chimu is once more, as at so many other points, indifferently eclectic. The fuller significance of these results waits on amplification of data.

It is apparent from the foregoing enumeration that with all that remains unknown about the interior of Peru, we possess abundant indications that the influence of the Highland was greater than there has been allowed room for in the accepted

reconstructions; and that with fuller data the part of the Highland will grow rather than shrink. For this fundamental view and its substantiation at many points, credit is due primarily to Tello.

The danger in the point of view is that it can easily be carried farther than our exceedingly scant knowledge. If it is developed slowly, step by step, as information accumulates, it will greatly deepen insight into Peruvian prehistory. Carried beyond this, it may retain a certain plausibility, but will more and more extend into the realm of arbitrary opinion.

III

The following paragraphs will indicate certain probable limitations on the theory of Highland origins. These limitations can be set forth conveniently in a review of new archaeological work during the past two years, as carried on by Tello and myself, in part conjointly on behalf of the University of San Marcos and the Museum of Peruvian Archaeology and of Field Museum.

In the Nazca area Schenck and I explored for Field Museum during nearly three months. The greater part of the time Tello or one of his assistants was with the expedition. It will be recalled that in this region the culture of Nazca was followed by that of Ica-Chincha, the latter containing an Inca ingredient toward the end. There is no possibility of the two basic types being locally instead of temporally differentiated because both at Nazca and Ica their sites are again and again found interspersed, never aggregated in solid areas. The specific problem of sequence concerned the phases of Nazca and of Ica. On these, stratificatory evidence would have been most welcome, but could not be discovered. It is in general not easy to find in Peru, and the chances are particularly unfavorable in a region like Nazca which is without concentrated sites of habitation or large structures. Schenck did discover a very clear case of Ica refuse accumulated to a depth of a meter over an area of Nazca graves. While providing no essentially new major insight, this discovery is most opportune because it confirms by direct evidence what had been previously accepted on indirect alone; and it has a certain importance because it is probably the first stratification in Peru

into which there enters the element of a clear occupation refuse, as contrasted with debris fill or graveyard soil.

As to the varieties of Nazca culture, Gayton and I had made a segregation of a data-less but otherwise excellent collection on the basis of correspondence of shapes and designs. This yielded two principal phases or strains: A, corresponding very closely to Uhle's small but pure type collection with data from Ica (Ocucaje), and also, though with somewhat less inclusiveness, to Tello's "Nazca"; B, corresponding to Tello's "Pre-Nazca," with the addition of shapes and designs not mentioned by him but found in repeated association on the same vessels as his distinguishing criteria. A phase X was on the whole transitional between A and B; it seemed not only a mixture of A and B but a strain containing intermediate forms. Finally phase Y was a reduced B, with "Tiahuanacoid" elements added. On the basis of stylistic development—the only criterion available—the time order A-X-B-Y was predicted.[31]

This sequence was confirmed by the 1926 excavations to the following extent. A complete series of transitions was found from the purest B to Y and from this to a pure Highland (Epigonal) style; and in turn elements of the latter, such as a certain type of flat bowls, appeared with only minor change in the Ica style. This gave the developmental series B-Y-Epigonal-Ica; and as X intergrades with A and B, the full series A-X-B-Y-Epigonal-Ica-Inca; which it would be very difficult to construe as anything but a time series since the factor of local variability is ruled out by the repeated co-occurrence of the styles within the quite limited area of one valley.

The bearing of these results on the broader problem of Highland influence is this. The one indubitable and pure Highland style among these seven at Nazca, namely, Epigonal, comes at a place in the series where it enters into the formation of the Ica style and supplants the last Nazca style, perhaps having helped its disintegration. There is thus nothing in the record to show that the Nazca style as a larger culture movement is of Highland origin. How and where it originated, what the antecedents of Nazca A

[31] Same series, 24: 1–46, 1927.

were, is something on which there is no evidence. We searched diligently for such a predecessor, but in vain. All that can be said at present is that Nazca A suddenly appears in Nazca and Ica valleys and is followed by such and such a development. There is no evidence one way or the other whether the predecessor of Nazca A flourished in Nazca, elsewhere on the Coast, or in the Highland. To choose between these alternatives in our present complete blank of knowledge would be arbitrary. The most that can be ventured is the probability that Nazca A being already a fairly well developed and definitely characterized style, it is more likely than not to have had at least some ancestral relative in its area.

For Nazca B we have one external clue. Characteristic of its design, as noted by Tello, is a multiplication of faces in series, with tentacle-like projections that curl on themselves at the tip. Now, as Joyce has pointed out,[32] this is also a trait of the one "pre-Tello" monument from Chavín, the Raimondi monolith; and a connection is strongly indicated. From this it would follow that the Chavín culture rather than being prior to the Nazca culture as a whole and being one of its formative influences, was contemporary with one of its later phases.[33]

This brings up the question whether it may have been Nazca that went into the making of Chavín, at least its N or Raimondi stone phase. There are facts that bear on this problem, though they are insufficiently conclusive. Nazca B is an outgrowth, in the main, of Nazca A and X. Its faces and tentacles therefore have a known antecedent on the spot; those of the Raimondi stone have not. On the other hand, the multiplication of faces seems to appear in B without precedent in A or X, and may therefore

[32] South American Archaeology, 181.

[33] There is one qualification. The Raimondi stone differs to my mind stylistically from the Tello carvings from Chavín. These do not show either face series or tentacles. There may thus be two styles at Chavín, M and N, with superficial Maya and Nazca resemblances (Cf. Field Museum Anthr. Mem., 2: 37, 1926). If so, M may be the earlier, and one form of Chavín culture may thus be earlier than Nazca B, or even Nazca A. Tello is disinclined to separate the Raimondi stone stylistically from the other monuments of Chavín, so cannot advance this argument; but its possibility seems to deserve consideration. Uhle makes the same separation of Chavín styles in Bol. Acad. Nac. Hist. Ecuador, 1: 46, 1920.

be an intrusion more or less assimilated by the style—like the interlocking fish pattern already mentioned. Also bearing on the question are occurrences, on Central and Southern Highland pottery, of unrepeated tentacled designs which may be conventionalized faces or animals. These are closely similar to tentacled unit figures to which the repeated elaborate tentacled faces of Nazca B are reduced in Nazca Y. They occur in the Highland in Huancayo ware which I was able to see on the spot during the 1926 expedition; and in a lot in Field Museum rather dubiously attributed to Cuzco. The Huancayo pieces also bear definite Highland (Epigonal) designs, such as V-bars in column; the "Cuzco" lot has quite Nazcoid colors and texture. In short, Nazca B and Y, Huancayo, Nazca-like "Cuzco," and Chavín N all contain certain common elements; and of them, Nazca B is the only one for which a direct predecessor is yet known.

These, I fear, rather technical and special considerations are adduced not because they suffice to solve the problem, nor even because the problem is one of primary importance, but rather as an illustration of the situation of Peruvian archaeology and the methods available to it. It is clear that ancient Peruvian culture was enough of a unit to make necessary its treatment broadly and as a whole. It is also clear that the interrelations of its parts were intricate. It is also evident that the fragmentary evidence in hand indicates in every way that enough further evidence can be secured to trace these internal interrelations, and the development of the whole body of the culture, with a relatively high degree of certainty, provided only the evidence is sufficiently analyzed and critically used. If the fragmentary evidence just discussed seem unduly subjective in that it reduces essentially to stylistic interpretations, the real difficulty is not in the stylistic interpretation as such. Style cannot be disregarded in archaeology: the distinction between a Palaeolithic and Neolithic, between a Chellean and Mousterian implement, is one of style. The difficulty in Peruvian archaeology of today is the lack of exploratory data which would give the stylistic criterion certainty and greater significance. We grope among our stylistic intuitions because the needed specific archaeological facts have not been

ascertained. Our "data" are still too largely objects torn from their context by huaqueros, passed on to collectors, and sometimes come to rest in museums.

The relation of the Ica style to the Epigonal is also typical. Ica carries on the heavy and heavily painted open bowls of Epigonal with relatively little change. But alongside them its graves and cemeteries contain a mass of thin ware, with acute angled bottoms, bevel lips, and textile patterns, which make up the bulk of what is recognized as the Ica style. To interpret this style as of Highland origin because it contains one clear Highland strain rather unassimilated to the rest, plus occasional animal designs which are highland, would be one-sided. On the other hand, there is nothing known to which we could point as its predecessor. All that can as yet be inferred is that the Ica style being reported only from a certain part of the Coast region, its distinctive characteristics are most likely to have developed there. That it is at least partly composite in origin is not exceptional, as we have seen. All Peruvian styles which we can sufficiently analyze prove to be composite. If Late Chimu has been spoken of as eclectic, it is only because it is especially so.

On Paracas peninsula near the mouth of Pisco valley, Tello explored in 1925 and 1926 Cerro Colorado and Cabeza Larga, two adjacent sites showing related but distinct cultures with many quite novel features. This is a discovery of the first importance. There is blackware, incised ware, a sort of cloisonné or inlaid ware, vessels of Nazca form but without Nazca design, other designs strongly suggestive of the Chavín style, fine textiles in pure Nazca manner (most of the best so-called Nazca embroideries in collections are probably from Paracas, according to Tello), and many objects wholly unknown before. On the whole, Cerro Colorado has the more numerous Chavín and Cabeza Larga the greater Nazca resemblances. Tello inclines to put at least one of the cultures, possibly both, before Nazca. The pottery forms seem rather to suggest Nazca B. Again there are a mass of traits which in our present knowledge are neither Nazca nor Chavín nor anything else, but peculiar to the locality.

In Cañete valley, I found in 1925 at Cerro del Oro a culture

quite distinct from the prevalent Late Chincha one of the area, and, as so often in Peru, new to science, although the cemeteries had been considerably exploited. Having previously reported briefly on this culture,[34] I shall not describe it here farther than to say that it contains a Nazcoid element, certain Ica resemblances, and features of its own, and is shown by stratigraphy as well as typology to be earlier than Chincha-Ica.

In the next coast valley to the north, Tello explored the site Malena, encountering intricate conditions. The structure is of Nazca-like hand-made adobes, and there are sherds of ware very close to Nazca, but no vessels or graves of Nazca style could be encountered in months of search. The mummies and textiles are relatively late in type; the pottery heavy, awkwardly formed, with very little design, and of an obvious Highland rather than Coast character. There have evidently been successive occupations of this interesting site.

My excavations in Lima and Chillon valleys in the same year have also been already outlined.[35] Their principal result is perhaps the stratigraphic confirmation of Uhle's determination of the horizon of Early Lima. I see with Tello a larger Highland constituent in this culture than does Uhle. But it clearly is a culture that has been remodeled and given its shape on or near the Coast. Its enormous pyramids of cubical hand-made adobes, for instance, can hardly be the product of an interior that constructed in stone and reared no pyramids.

IV

The Northern or Chimu Coast is a particularly intricate region, some six or eight stylistic strains being already recognizable in the pottery. I have recently attempted to dissect these out[36]—perhaps too analytically for permanent findings—so shall not review the situation as a whole but mention only certain new or reenforced considerations acquired in a second and longer visit to the area in 1926.

[34] Am. Anthr., n.s. 28: 331–351, 1926.
[35] *Ibid.*
[36] Field Museum, Anthr. Mem., 2: 1–43, 1926.

Tello inclines to derive the Early Chimu (Mochica) culture from that of Chavín because of the occurrence on the Coast of certain vessels which may be described as essentially Early Chimu shapes modified or bearing ornament in the manner of the Chavín sculpture.[37] Also certain dipper-like vessels have analogues near Chavín in the Callejón, as already mentioned. There is at issue here a point of procedure as well as fact. If we knew of series of graves containing a half-formed Early Chimu style with a direct Chavín style admixture, we might justifiably consider these graves earlier and their ware to have been largely responsible for the development of the pure or classic Early Chimu. On the contrary, what we know of Chavín on the Coast is all in the nature of a very small admixture among typical Chimu. The Uhle collection, for instance, the only one with recorded grave associations, contains two pieces with indubitable Chavín decoration, and four more which lean the same way,[38] among six hundred pure Chimu ones; these pieces occur in four or five out of thirty-odd graves that were adjacent and evidently essentially contemporaneous. The way in which Chavín-ornamented vessels occur in other collections from the area—not in groups or lots, but scattered in a ratio of at most one in a hundred—indicates that Uhle's Moche find is not abnormal. To derive the ninety-nine percent of pure Early Chimu ware from the one percent of combination of Chimu shape with Chavín ornament, would be subjective. It would also after all not be an explanation, since it would leave the bulk of the style, including the predominant stirrup-mouths, unexplained. The case would be better if the stirrup-mouth occurred, even in a minor way, in the interior; but it does not.

As to the dippers, if it were clear from stratigraphy, associations, or other evidence that the crude ones from the Callejón were actually earlier than Early Chimu, or even than say the Recuay phase of the Northern Highland culture, there would be a case. All that we positively know as yet is that they are cruder; and most Highland ware is cruder than most Coast ware. I incline to believe that the Coast dipper is derived from the interior; but

[37] Cf. note 23.

[38] Field Museum, Anthr. Mem., 2: 38, figs. 3, 4.

on the stylistic ground that the horizontally projecting handle has analogues in the interior—the horizontal spout—and not in Chimu. This argument can yield no more than a subjectively conditioned probability; and it is this sort of reconstruction that we are trying to transcend. At that, in proportion as the argument holds, it makes the dipper an intrusion into an alien style; and again this style as a whole remains underived from the Highland—and unexplained.

It seems likely that other elements of Early Chimu will prove to have connections, in whichever direction of influence, with the Northern Highland, as further material comes in and is analyzed. The areas are too closely juxtaposed for expectation to run otherwise. But according to evidence now in hand, the Early Chimu style heaves into our view essentially as developed, as self-sufficient and rich, and as lacking in known antecedents, as the Nazca style. As to time, all that can yet be said is that the appearance of certain full-fledged Chavín ornaments in full-fledged Early Chimu makes it clear that the two styles overlapped in time if they were not substantially contemporary.

As to Late Chimu, we are beginning to see some light, and better defined problems beyond. In Virú, the valley next south of that of Trujillo—which latter until now has been the only one explored on the northern coast—I found a cemetery containing Late Chimu in association with Cursive, Three-color Geometric, Epigonal, and Tripod ware. The latter are all Highland styles or strains. Their association at this Virú site of Taitacaltin is intimate, designs of one strain appearing on forms characteristic of another. The associated Chimu ware is generically of Late type; but it is not the classical Late Chimu of Chanchan and of most collections, which comes with an admixture of Inca aryballoids. The stirrup-mouth is not preponderant; and on the other hand there are Highland forms like the tripod bowl executed in blackware. This means that the site represents an intrusion of Highland influences which mingled with a Chimu tradition which temporarily was retroceding, but which later regained strength sufficiently, on its own territory, to discard some and transform others of the Highland traits. Out of this absorption there grew

the typical Late Chimu style, which is so obviously full of elements lacking in Early Chimu and yet in the main a carrying on of the bent of Early Chimu. That is, on Chimu soil, the Chimu tradition remained the absorbing medium which chiefly determined the final stylistic product as a whole; but much of the content of this style came from the interior. The Virú site represents the moment of contact and fusion. Its remains agree closely with the scant ones that Uhle discovered at Moche, and explain why he found Three-color Geometric graves physically underlying classical Late Chimu burials.

There is thus evidence of at least two Andean irradiations into the northern Coastland. The earlier brought Chavín sculptural designs and forms like the dipper; the latter, Cursive designs and forms like the double-spout. Some of these imports passed away and some were permanently incorporated. But the main current of Chimu style flowed on, with say the stirrup-mouth as criterion. As regards its most salient and permanent characteristics, there is nothing as yet to show that this current derives from the Highland; but its Highland constituents, both early and late, can no longer be disregarded.

The reciprocal Coast influence on the interior can only be studied satisfactorily after we have more Highland material. It can hardly have been absent. The group figure modeling of Callejón (Recuay) may prove to be a made-over influence derived from Early Chimu. At least it would be strange if the high development of modeling on the Coast had not found some reflection in the Highland.

Early and Late Chimu are both found in the Santa, Virú, Trujillo, and Chicama valleys. But North of Chicama Early Chimu suddenly drops out—more completely even, according to surface indications on the spot, than museum collections would lead one to infer. From the Jequetepeque to the Leche valleys, which I visited, and apparently beyond to Piura, collections and cemetery remains are consistently "Late" Chimu, with only slight local modification from the Late Chimu of Trujillo. The first problem of this northernmost coast is to discover whether anything else exists; and if it cannot be encountered, to search

the immediate interior, about Cajamarca and north, for related material which by comparison will serve to decompose the northern Chimu into its historical constituents. Certain jars, including those which I have elsewhere designated as shapes FJ and RFJ,[39] look extremely Highland. They are fairly numerous in this northern Chimu area, absent or sporadic in southern Chimu. On the other hand, the stirrup-mouth seems relatively somewhat less abundant—though still frequent—in the north. Enough exact data of this order will give some insight into the development of the culture of the northernmost coast, which at present presents a timeless appearance.

The pyramid of the northern coast has narrow or no terraces, steeply inclined faces, a large top usually subdivided and serving as cemeteries, and a frontal or lateral inclined approach. To some extent these features appear in the Early Chimu Pyramid of the Sun at Moche, but they are more pronounced north of Chicama. Some of them, like the summit burials, are perhaps local traits; others, such as the ramps, suggest Mexico. Of course this may be also a local trait, with the Mexican resemblance a coincidence. But the fact that the three-legged bowls so characteristic of Mexico, Colombia, and Ecuador, are found in Peru, as distinctive element of a style, only in the north, makes it clear that we are in this region at a point where connections even with Mexico cannot be offhand ruled out of consideration as vague and superficial.

Metal, to judge both from collections and from cemetery debris, was more abundant on the northern than on the central and southern coast, even in the late periods of the latter. This fact tends to confirm the northern center of metallurgical development more or less independent of the bronze inventing center of the Titicaca area, as Nordenskiöld,[40] Jijón y Caamaño,[41] and Rivet[42] have suggested. Whether this north coast development is to be connected first with Colombia and secondarily with

[39] *Ibid.*, 27, 28.

[40] Comparative Ethnographical Studies: 4, The Copper and Bronze Ages in South America, Göteborg, 1921.

[41] Tincullpas, Bol. Acad. Nac. Hist. Ecuador, 1: 40–43, fig. 1a, 1920.

[42] Journ. Soc. Amér. Paris, 13: 261–277, 1921; L'Anthropologie, 33: 63–85, 1923.

Mexico, as Arsandaux and Rivet see it (though they make the second radiation late and from south to north); or with the interior hinterland; or whether it is essentially local, is an important and no doubt soluble problem.

Burials seem mostly to be extended on the whole northern coast—an unusual position in Peru: Early Lima is the one other definite example, other than post-Conquest graves. Skull series with Early Chimu associations usually run a mixture of natural long and fronto-occipitally deformed broad-headed individuals. Hrdlička had observed this mixture in Chicama[43]; though it is almost certainly Early, on the basis of the cultural associations recorded by him, not Late as he believed. On the other hand, it is possible that the instability of habit as regards deformation may have continued into Late Chimu times: I have seen little Late skeletal material, and in the stretch north of Chicama it would probably have to be obtained by excavation, as it is generally wholly wanting from collections and the surface. The explanation that most readily comes to mind for the mixture or fluctuation of habit within one population is that of a meeting of Highland and Coast customs. But again we need some data from the Highland, and more from the Coast, before we can do other than conjecture.

In the Virú-Trujillo-Chicama stretch Early and Late Chimu adobes are almost or wholly indistinguishable: form-made, rectangular, flat surfaced. Beyond to the north, they frequently show one variation: a rounded upper side. This feature recalls the hand-made round-contoured adobes always found with the Nazca and Nazcoid cultures of the south, but is puzzling. The rounding, imposed as it were on an essentially rectangular brick, somehow parallels the coexistence of long natural and short deformed skulls. Both may be the result of the survival of early traits in a marginal area—as the far-north Chimu coast obviously is to Peru as a whole—until their association with later traits. If such a process had been operative, it might explain why the pottery of the area is, or seems to date to be, so uniform and unsegregable into groups of obviously different age.

[43] Smithsonian Misc. Coll. 56, no. 16, 1–16, 1911.

These observations will suffice to show the range and importance of the problems which the north Coast offers, as well as the probability of the usual Coast-Highland relations having obtained in this area.

V

It remains to examine whether general considerations can at any point carry us farther than the special analyses that have been reviewed.

Except as to temperature, which is everywhere moderate for the latitude, the Peruvian Coast and Highland provide rather different environments for human cultures to crystallize in. Theoretically this fact might throw light on the relative antiquity or cultural dominance of the two regions.

The coast consists of fifty or sixty short transverse stream valleys, all except the longitudinal Callejón heading in the first chain of the Andes. They come at fairly regular distances apart, averaging twenty to twenty-five miles from stream mouth to stream mouth. A few are confluent; some separated by mountain spurs; most, by pampas or tabladas of low or somewhat elevated and unreclaimable desert. Most of the valleys, so far as their habitable portion is concerned, broaden only shortly before meeting the ocean, so that their general shape is triangular, ranging from acute to obtuse. Much the greater area of most valleys lies under 200 m. altitude, but the upper narrow portion sometimes continues to about 1000 m. Below this level there is practically no rain, only seasonal fog. The rivers usually run rapidly to their mouths, sometimes above adjacent parts of the plain; the ground is level except for a just perceptible seaward slope; and large scale irrigation is therefore practicable without difficulties. The ground is mostly fertile; the climate extraordinarily equable and mild. The aggregate inhabited area of the coast is surprisingly small, but the population is and was rather dense.

Whether this Coast environment was favorable for the reception and development of culture, depends of course on the culture. A non-agricultural population would have found plenty in the sea, nothing but shrimps in the rivers, and poor and limited hunt-

ing in the narrow and scattered thickets of brush along the streams. An agricultural population with even the rudiments of irrigating ability would have found an unusually profitable and easy subsistence, leading probably to a rapid increase of numbers. An agricultural population with habits so channeled as to lack all impulse to irrigate—if there was such a population in America—might have passed the valley by as inhospitable desert.

Above 1000 meters, sometimes even sooner, the environment changes. The valleys become gorges with only patches of bottom. Agriculture begins to be practiced in narrow terraces, watered from springs or streams in the mountain-sides high enough to receive irregular rains. There is no room for a large population; modern towns and ancient ruins are small. This coast hinterland is reckoned as Coast today when Peru is divided into its three great zones of Costa, Sierra, and Montaña; but it is at least half Highland culturally, and clearly was so too in ancient times. Construction was of stone instead of adobe, buildings scattered, the pottery heavy, agriculture in terraces rather than fields. This transition zone, the Ceja de la Costa, extends to 2000 m. or more. In elevation it corresponds most nearly to the areas of Mexico and Central America in which culture largely flourished and is supposed to have attained much of its first development. But in Peru it is too narrow and confined ever to have been of prime importance.

From 2000 or so meters up to the highest habitable puna, lies the Sierra, the Highland. Its most important portions culturally of course were and are the inter-Andean valleys; but the upper seaward flank of the first Cordillera is included. This is the country of the llama and the potato, of most of the modern mines and probably the ancient ones too. It is and was the great core of the country, containing two-thirds of the inhabitants. To a non-agricultural population, or one attempting to farm without irrigation, it would have offered a much more tempting habitat than the coast; to an irrigating one, perhaps a less inviting one. Or, assuming new culture ingredients to have reached a population already resident, everything would depend on what culture this population had established, and what knocked at its door from

outside. The generally great elevation of the Highland would have been no obstacle to any but a tropically conditioned culture, because proximity to the equator nearly balances the effect of elevation in all but the higher basins and plateaus. Even a tropical culture could theoretically have seeped gradually up the great rivers as they flow deep between the chains or through them, until acclimated for a farther ascent.

It is evident that the purely geographic approach is insufficient to solve our problem. On the other hand, the difference between Coast and Highland is great enough to make the environments a definite element to be considered in the tracing of culture relations. If Peru is culturally but part of a greater Middle America, and if the higher civilization of this Middle America is indigenous and essentially of Highland origin, Coast cultures like Chimu and Nazca will have to be looked upon as local and secondary divergences. But there remain several large if's to be substantiated first. Exact analyses of Peruvian culture can hope to contribute to the more and more complete unraveling of the larger American problem, as much as to receive aid from it, especially at present.

Probably everything we yet know of the archaeology of Peru falls within the last two thousand years, perhaps less. This is a short period so far as "origins" are concerned. That a culture like that of Nazca, seemingly as old as any we know on the Coast, already uses wool and metal, both of them materials presumably first used in the culture of the Highland and continuing to be exported to the Coast, proves nothing as to the remainder of the culture. The evolution of a technique of pottery making and style of decoration so saturated and developed as that of Nazca, requires as much in the way of cultural antecedents as the possession of wool and metals; and where these antecedents flourished, is as yet a blank.

The fundamental obstacle to understanding in this and all related questions is sheer ignorance of fact. Tello, as the result of long familiarity and opportunities for a survey of material, estimates that 25,000 vessels of Nazca style are lodged in institutions and the larger private collections. Small collections and scattering pieces may bring the total up to 30,000. On the basis

of my field experience, I would compute that these specimens represent the sacking of at least 15,000 graves. The majority of objects in burials are either found broken or are discarded as unsalable. Two marketable "huacos" per grave opened seems as high an average as could be obtained. Against these 15,000 graves rifled without record of a datum, Tello and the Field Museum expedition jointly opened 150 in 1926. On this one percent of material depends the interpretation of the other ninety-nine. And the culture was known twenty-five years before the one percent was secured. For the Chimu area the proportion is lower; and for many parts of Peru it is nil. Assume similar conditions for study of the Palaeolithic and it is evident that early European prehistory would not yet be the stably founded edifice of innumerably integrated pieces of fact that goes so far to satisfy the world's desire to know. When institutions and individuals begin seriously to replace the buying of collections by investigations of what is in the soil—a more tedious and costly process—Peruvian archaeology will emerge from its maze of conjectures out of which as yet we can for the most part only glimpse flashes of probability. A very real appreciation is due Field Museum for its enlightened attitude on this point.

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RICE, A MALAGASY TRADITION

Recorded By RALPH LINTON[1]

WE BELIEVE that Madagascar was the original home of rice. Although we know that our ancestors came to this island after a long voyage across the sea there is no story of their bringing it with them or of its having been introduced by strangers. Rice was known to the Kimo and Vazimba.[2] We have a saying "Aza mana totovarim-bazimba," "It accomplishes nothing to pound rice in the fashion of the Vazimba," for they pounded their rice clumsily, two people working together and striking their pestles into the mortar at the same time. Rice that grows poorly and among weeds, as though it were wild, is still called "rice of the Vazimba." According to the traditions of the ancestors rice was first found growing wild. The Vazimba gathered the seeds as they did those of other wild plants, crushed them, and roasted them in earthen pots. They found that rice was the best and most strengthening of all foods, and since then it has been the principal food of all the Malagasy. It is the treasure of Madagascar and we have a saying "Vary Andriaminitra," "Rice is a god." For this reason it was formerly forbidden to feed it to pigs or to sell it to foreigners unless it had first been cooked, so that they could not carry it away and plant it in other lands.

All the Malagasy call rice "vary," "seed of the water," but there are more than seventy kinds, each of which has its name. It is cultivated everywhere except in the high mountains and in a few places where the soil is too poor. The tribes of the east coast have a variety which they plant on hillsides. They cut and burn the brush and plant the seeds among the ashes one by one, making holes for them with a pointed stick. New brush must be allowed to grow between crops, and for this reason they have to move their

[1] Capt. Marshall Field Expedition to Madagascar. By permission of Field Museum of Natural History, Chicago.

[2] The Kimo, "rich people," and Vazimba, "dwellers in caves," are frequently mentioned in Hova traditions as the first inhabitants of the island. They were conquered and absorbed by the Hova, but their tombs are still held sacred.

villages every three or four years. They have another kind of rice which they plant in the heads of valleys, where small springs make the soil moist, and still another which they plant in the swamps. These give good crops in the hot lowlands but are not good on the high plateau.

Our ancestors knew more about rice growing than any of the other tribes. They understood all about soils, fertilizers, and the preparation of the fields. The best soil is clay with lime and a little sand. Pure clay is too hard and stays too wet, while if there is too much sand the rice will not bear well. Unless the field is new and rich in humus, or there is plenty of volcanic ash in the ground, fertilizer has to be used. The best is the half rotted straw from the cattle pits. Ashes from the fireplace must be spread on the seed beds and our ancestors also covered them with the sweepings from their dwellings. They kept the sheep and chickens in their houses, so these sweepings were good fertilizer. If nothing better can be gotten the fields are covered with green lily leaves which are dug in when the field is cultivated.

The seed beds are usually made on hillsides, one above the other. They are surrounded by little walls of earth which keep in the water and also serve as paths when the fields are flooded. The preparation of the beds takes a long time. First little canals are dug across them to dry them thoroughly. Then the earth is cut out in square clods, like bricks, and these are piled up to dry and air. When they are quite dry they are broken and mixed with manure and the beds are leveled and flooded ready for the planting. The fields are prepared in the same way, although the clods are not cut so carefully, and at the last cattle are driven back and forth over the flooded field to make the mud smooth and soft. The digging is done with a long heavy spade. His spade is a matter of pride to every farmer. The blade is polished and the handle is of valuable wood oiled and polished. A man will sometimes pay as much for his spade as he can earn in two weeks. An old spade that has been tried will bring more money in the market than a new one, for the foreigners' iron is not as good as our own.

Formerly rich people's fields were worked by their slaves. Poor people gathered together and worked all the fields belonging to

the family one after the other. The man whose fields were worked that day made a big feast for everybody in the evening. There was no hired labor as there is nowadays.

The seed for the first crop is sown in April or May, that for the second crop in September. The blooming of the Ambiaty is a signal for the planting of the second crop, but it stays in bloom about a week and families who could afford it would consult a diviner to find which day was most propitious. Rice will still sprout after several years, but it is best to use that from the last harvest. Ripe grains that are very dry are selected and stored in earthen jars. When planting time comes the seed rice is soaked in water for three days, until it sprouts, and is then sown broadcast on the flooded seed beds. Our ancestors never sewed the last handful of seed rice. They carried it home and put it in the northeast corner of the house, where the family charm was kept and the offerings to the ancestors were placed. The man who was carrying it had to go home by the shortest road and could not turn aside for anything. If he did the harvest would fail.

As soon as the seed has sprouted well the water is drawn off and the seed bed is covered with manure. A few days later the water is let in in the morning but drawn off at night. This is kept up for two or three weeks, after which the water is left on the bed until the young rice is ready for transplanting. This is women's work. They uproot the plants, tie them in bundles, and carry them to the fields, where they plant them again in the soft mud, pressing them in with their fingers.

The rice has many enemies. While it is still in the seed beds it is eaten by rats and mice if the beds are dry, and by wild ducks if they are wet. We build clay pillars at the corners of the seed beds, whitening them with earth and putting hats of dried banana bark on them. The birds think these are people and are frightened away. After the rice has been transplanted it may be choked by weeds, or its roots may be eaten away by an insect called Fano, or a swarm of locusts may descend upon it. The locusts are the worst of all and when the farmers see them coming they make big fires so that the fields are covered with smoke. In former times almost every village had a sorcerer who claimed to be able to keep

the locusts away. When a swarm was seen he went out of the village, usually climbing a hill, and stood there without saying anything. As long as he remained standing the locusts would not settle on the rice fields. Every one injured and insulted him, for this was part of the charm. The sorcerer's power over the locusts was inherited from his ancestors. The same sorcerer made charms against the hail. When the storm began he would go out naked except for a loin cloth. He carried a rice pestle with which he beat the wind and rain. Afterwards he leaned the pestle against the wall of the house, close to the southeast corner. He also carried a small round pebble, like a hailstone, in his mouth, and it was believed that in this way he kept the hail in his power. While the rice was growing it was forbidden for the people to eat peanuts or to burn green plants at the fire in the house. If locusts came or hail fell the sorcerers would claim that it was because these rules had been broken.

When the rice is ripe its leaves turn yellow and its head bend toward the ground. When it is just beginning to ripen it is said to "mampandainga zaza," that is, "to make the children lie to their parents." The children see that it is turning yellow and run home shouting that it is ripe and ready to cut. When the sun is high it is hard for any one to tell whether the rice is really ripe. To be quite sure one must look at the fields early in the morning just at sunset. The men reap the grain with straight knives that have teeth along the edge, like saws. The women and children tie it into sheaves and carry it to the threshing floor. There it is left lying in the sun for a week or more, until it is quite dry. There is a threshing floor in every village. It is a level place with a hard clay floor and a low clay wall around it. In the center there is a low stone pillar. When the rice is dry a man takes the sheaves one by one and beats them against the stone so that the grains fall out of the head. Sometimes several men work at this, but then there is always danger of their striking each other in the face. In the Tanala country five or six men thresh at once and we have a saying that when you see three Tanala together one of them is sure to be a one-eyed man. The women gather the grain and chaff

in baskets which they hold above their heads and pour out slowly, so that the wind carries the chaff away.

When the rice has been threshed and winnowed it is stored in the granary. Our ancestors had four kinds of granaries. One sort was a little wooden house on posts. The posts were made very smooth and had broad wooden collars around them to keep out the rats. Another sort was built in the southeast corner of the house, like a square room. The only opening was a hole in the top and one climbed up to it with a ladder and then dropped down inside. Another kind was made of mud and stood fifteen or sixteen feet high. It was shaped like a beehive and there was a little door on one side just below the top. The commonest kind was a pit dug in the hard clay soil. It was small at the mouth but large enough below for a person to stand up and walk about in. Our ancestors sometimes put witches and other bad people in these pits and poured boiling water on them.

The rice is taken from the granary a little at a time, as it is needed. The women pound it in wooden mortars with long heavy pestles. After pounding it is winnowed. The first pounding takes off the husk and it is then red rice, the food of poor people. At the second pounding the red layer comes off, leaving it white, and that is what the rich eat. To make some dishes the grain is crushed to coarse meal. For breakfast we have Sosoa, whole rice boiled with a great deal of water. This is also given to sick people. For dinner we have Ampangoro, rice boiled until the water is all gone. We also make rice dumplings, doing up the meal in pieces of banana leaf and boiling it. We call these Betrosa, because one takes off the banana leaf before eating it, just as in old days a creditor would take away the cloths of a debtor who could not pay. When the dumplings are long they are called Fatinzaza, "body of an infant." The rice is also roasted and crushed. This is called Lango, and was the food of the ancestors. It is eaten at the harvest ceremony and is a good food to take on journeys. Poor people eat boiled greens with their rice while the rich have meat or fish. At a meal the wife always serves the rice and the husband the meat and gravy.

All parts of the rice are useful to us. There is little wood here

in Imerina and we use the chaff and broken straw for fuel. The better straw is used to bed the cattle and to thatch poor people's houses. When I was a young man straw could be gotten for almost nothing, but now people ask insane prices for it. The price of rice, too, rises every year. This may be good for the rich people and the rice merchants, but the lives of the poor are getting harder all the time. We Malagasy can not live without rice. We do not eat the foreigners' bread even when we can afford it, for it does not fill us up.

In the old days every family held a ceremony of thanksgiving when its rice had been gathered and stored. The following things were gathered for use in the ceremony: Three times three perfect heads of rice, a sprig of the Sodifana plant and another of the Tatamo plant, a little basket used for measuring rice, and some fish of the sort called Toho. The rice was an offering. The Sodifana plant will live even when uprooted and laid in the sun, and the Tatamo plant will come up time after time when you think it has been destroyed; together they symbolized the persistence of the family. The rice measure was a symbol of wealth and prosperity. The Toho fish symbolized continuation, for that is another meaning of its name. When all was ready the family gathered in the northeast corner of the house, which was the sacred place. It was sacred because the dead were always laid out there and their spirits lingered there even after the bodies had been buried. We used to believe that our ancestors were still alive and had great power. They were like gods to us.

The father of the family acted as priest. He put the heads of rice under the roof in the corner and prayed: "Oh Creator God, thou who hast made us and art the source of our existence, we present ourselves before thee to offer thee these chosen heads of rice. But thou are not alone, Creator God. Our ancestors are with thee and have also become Gods. This offering is for all of you." At the end of this prayer all the family cried "Hahasoa! Hahasatva! May this bring us good things and well being."

The wife had prepared some of the new rice in the form of Lango (roasted and crushed) and had boiled some of it with water. She had also boiled the Toho fish. The Lango was placed

before the family first and the father prayed: "Oh Creator God, we make this prayer about Lango, the first food of our ancestors, and thank thee before all. We pray that the first taste may bring us happiness and prosperity, well-being for the children and their parents during the day and the night, during the weeks, the months, and all the years that follow each other. May the earth provide us abundant food. May our ancestors also guard us." The whole family then cried "Hahasoa! Hahasatva!" as before. After this day they ate a little of the Longo, picking it up with their right hands, for it was forbidden to touch it with a spoon.

When the boiled rice and toho fish were brought, the father prayed again: "We are about to eat the rice cooked with water. The water is the source of our existence. Oh God who has made all and knows all, hear my prayers. I pray first with the Sodifana plant. Keep us from death and let us live with well-being and affection for a thousand years. I pray now with the Tatamo plant. Preserve our family. Do not let it be uprooted by jealousy or evil ways of life. I pray now with the rice measure. May our house be kept in good order and may no trouble approach us. Let wealth enter our home. I pray now with the Toho. It lives in the water that we drink and we will eat it with the first rice. Let our health and strength be continued." The whole family responded as before. It was forbidden to eat the new rice until this ceremony had been held.

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CIRCUMCISION RITES AMONG THE BAJOK[1]

By CLAIRE PARKER HOLDREDGE[2] AND KIMBALL YOUNG

IT IS now well recognized in cultural anthropology that material traits are much more rapidly altered by the incursion of a new (higher) culture than are the social and psychological traits. The latter often persist long after the former have quite disappeared. Thus, the *obeah* which the African imported into the West Indies continues, in spite of legal formulations against it, to this day. It remains a subtle but very real means of social control among the negroid folk of those regions.[3] So, too, the negro brought many customs and magical rituals with him upon his importation into the United States. Some of these culture traits persist in the use of and belief in the witch doctor among our southern negroes. Psychopathologists have recently had the opportunity to observe the influence of this magical practice upon the mental processes of certain individuals. This has thrown light upon the mental mechanisms involved in that whole field of magic as it affects behavior.[4]

In Africa wherever the white man's culture has touched that of the native, the material traits of the former have tended rapidly to supersede the indigenous material traits. Among many of the Central African groups, as with the BaJok, the art of weaving has disappeared. So, likewise, the native working in metal is disintegrating, especially the art of primitive metal work particularly the traits connected with smelting. The native devices for securing

[1] This spelling is that used by A. C. Haddon, *Races of Man*, 1924, p. 52. Another spelling is that of *Batchokwe*, apparently the more common spelling of the white man of that region. F. Starr gives "Bachoko."

[2] The major author (H) spent the years 1923–25 in Angola, Portuguese Southwest Africa. The narrative of the rites themselves is drawn from his own observations and from information furnished him by natives and others. Where the information was acquired other than from personal observation a notation of the same is made.

[3] Cf. U. G. Weatherly, "The West Indies as a Sociological Laboratory." *Am. J. Sociol.*, 1923: 29: 290–304.

[4] A. B. Evarts, "Dementia Praecox in the Colored Race." *Psychoanalytic Review*, Oct. 1914: 1: 388–403.

food are giving way to the more convenient inventions of the white man. In the social organization, in the terms of relationship, in the persistence of fetishism, in the continuation of initiation rites, however, the older native culture remains but little altered by that of the intruder.

Occasionally there is a definite effort made to put a legal ban upon certain native customs which offend the white groups, just as in the West Indies efforts have long been made to suppress the *obeah*. Sometimes this external pressure has temporarily submerged the native customs, only to see its re-inception at an early opportunity. Thus, Kidd reports that although the Kafir gave up the rite of circumcision under the white man's influence, it was later reinstated.[5] And Roscoe and Brown have furnished us with considerable information of the persistence of this ritual among the Bantu tribes.[6]

The present paper is concerned with reporting the rites of male circumcision, which serve as the ceremony to initiate the adolescent into adult age classes.

The BaJok inhabit a section west of the Kasai river lying between 6°30′ and 9°15′ South latitude and between 20°0′ and 22°0′ East longitude. The village in which this ceremony took place is located in the south-central part of this area, on a small tributary of the Chiombe river. The village is typical of that region. It consists of some ten poorly constructed grass huts arranged in a suggestion of a circle about sixty feet in diameter. The ceremony takes place in and near the village.

The circumcision ceremony is held for all male members of the tribe at or before the age of puberty. The more common age is that of puberty although for many of the lowest social class the rites are performed at a more tender age. Throughout, the women and children are kept in entire ignorance of what takes place during the ceremony. There appears in the village at the time of the call for the ceremony the so-called "Magish." He is imagined

[5] D. Kidd, *The Essential Kafir*, 1904, p. 206f.

[6] J. Roscoe, "Notes on the Bageshu." *J. Anth. Institute*, 1909: 39: 181–195. Cf. J. T. Brown: "Circumcision Rites of the Becwana Tribes," *ibid.*, 1921: 51: 419–427.

by the women, children and uninitiated to be a worker in magic. He is dressed in a knitted suit covering every part of his body in such a manner that not a vestige of skin or wisp of hair is to be seen. The suit terminates in and is attached to a very elaborate head-dress, including a mask of hideous nature. While he terrorizes the women and children, the initiated know all about him. His function, from what was said by the natives, consists in the instructions to the novices during the probation period following the ritual proper. The "Magish" does not appear to be any particular person, but anyone who might be asked to don the costume and assume the rôle. The boys, it would seem, are taught the "work" of the "Magish" during their initiation period.

The two boys for whom the ceremony was to be performed were brothers about twelve and fourteen years of age respectively. Both were about five feet five inches in height. Their weight was about one hundred and twenty pounds each. They showed good muscular development and were apparently in perfect health. Their skins were smooth and glossy and rather a deep bronze than black in color. They were mesocephalic. Their hair was scanty and woolly, eyes black, cheek-bones slightly prominent, noses platyrrhine, lips thick and chins short.

Since the grandfather of these boys was the village headman or chieftain, the whole family occupied a rather important social position. It was the father, however, who early in December 1924 informed the major writer of the forthcoming ceremony and, upon demand, permission was given to attend the same. The father explained that preparations were already underway for the ceremony (this was nearly a month before it took place). Notice of the date had been sent to all his friends and acquaintances far and near (perhaps members of his family class). Everyone in the village had been saving corn for weeks. Considerable quantities of honey were also stored away. From these alcoholic beverages would be made for the participants of the all-night dance that was to precede the ceremony.

People began to arrive three days before the date set and on the evening of the dance there were present at least one hundred and fifty persons of all ages and of both sexes. The guests were

expected to bring presents for the boys. These were kept by the father and given to the boys after the initiation was completed. As soon as the sun had set, the drums began to boom forth and the singing and dancing commenced. A visit was made to the village during the evening. While many of the men were in a condition of more or less intoxication there was no violence of any sort. The women and children did not drink. This included the two boys for whom the ceremony was held, since they were still children and would not become "men" until after the ceremony. The revelry continued throughout the night. The dancing was still going on as late as ten the next morning when the ritual proper was to begin.

The boys had been stripped of all articles of personal adornment. All hair had been shaved from their bodies, including the pubic hair. They wore only a short skirt, resembling a Hula dress, made of grass. Their bodies had been thoroughly covered with palm oil. Over their faces and bodies various designs had been painted with red and white clay.

A few yards from the village was an enclosure or corral about forty feet in diameter. It was constructed of scrubby upland trees. These had been stuck into the ground vertically and the branches intertwined so as to form a stockade some six feet in height. There were small openings on opposite sides of the enclosure. To one side, half the distance between the openings, a small hut had been built.

When the last dance was finished, several strong men hustled the two youngsters into this enclosure. With them went all the males in the village who had been circumcized. The subjects were stripped of their grass skirts. An old woman emerged from the hut just described. She carried water, some green leaves and a flour sifter. A mortar was produced in which she crushed the leaves. The mass was then placed in the sifter. The boys were required to stoop over until their backs were in a horizontal position whereupon the woman held the sifter over them and poured water over the crushed leaves, allowing it to run down upon the backs of each boy in turn.

Almost before anyone realized what was going on, the men in

charge had taken hold of the boys again, passed out of the enclosure at the opposite side from which they entered, and were hurrying them through the grass some yards away. The crowd of males followed in haste. The party passed over a low ridge until out of sight of the village, and then halted near a place where the grass had been cleared from a small space about ten feet in diameter.

Here each of the boys was seized by a strong man from behind. The man twined his legs firmly about the boy and also pinned his arms together behind his back. With this the man fell over on his back holding the boy thus securely on his torso. Other men held each boy's legs and arms from the sides so that neither of them was able to move or do more than to call lustily for his father and mother which each did when the operation began.

The men who performed the operations took up their positions squarely in front of their subjects and between their legs which had been spread apart by those who were holding them. There was thus one operator for each boy. The instrument used for the operation was a native-made hunting knife with a blade about three inches long. It had been thoroughly sharpened by whetting on a piece of stone. It had not been sterilized in any manner.

Pulling out the prepuce with his thumb and forefinger the operator severed it as close as possible to the point of the glans penis with one sharp flash of the knife. The remaining prepuce was then pulled back to its normal position. The remaining portion which was attached just behind the neck of the glans penis and which formed a sort of roll there was next split in the center on top of the glans penis and each half severed by cutting around to right and left respectively.

During the operation the father of the boys began searching the ground around each boy. He was gathering up the portions of the severed prepuce. When he had secured them, he withdrew a few feet from the group, inspected and counted the pieces. These he then rolled up together in a leaf and tied the package into one corner of his loin cloth. Upon being questioned about this matter, he replied that it was his duty to collect these pieces carefully, making sure that he had missed none. During the following night

he was to steal out and bury all somewhere in a secluded spot where no one would ever discover them. Should he not do this and anyone else thus later come into possession of the pieces, that person would then have great power over the boys to do as he wished with them. Such a person might make them ill, if he so desired. He might make them run away from their father. He might make them become demented. He might do any evil which struck his fancy.[7]

The operation finished, the boys were removed to the spot where the grass had been cleared and placed in a sitting position on the ground. A small stick about twelve inches long and three-eighths of an inch in diameter was split for three or four inches at one end and placed astride of the glans penis of each just behind the wound. The boys were required to hold the other end of the stick on a spot of clay placed at the end of the sternum. Some other boys who had, of course, gone through the ritual, approached with manioc flour which they sprinkled freely on the wounds which were bleeding rather profusely by this time. This manioc flour was applied until the bleeding ceased.

While the boys were being thus attended, the young men of the group brought grass and sticks with which they rapidly constructed a grass hut over the boys as they sat on the ground. At the same time the old men of the village including the father, grandfather, and the two men who had performed the operations, danced solo, to the accompaniment of the drums. Each of the two operators held in his hand, as he danced, the knives with which the operations had been performed.

When the older men had finished their dancing and the hut over the novices was completed, all the boys attending the ceremony but still quite immature were assembled. A place was chosen where two small trees about three inches in diameter stood about four feet apart. These trees were bent over toward each other and tied together in such a way as to form a sort of arch. Two loops of grass about eight inches across and linked together were suspended in the center of this arch. The drums were brought

[7] We have here, of course, the native's protection of his offspring against evil magic. The BaJok call this power Bwanga or Wanga.

and placed a few feet to the rear. Several of the older men stood between the arch and the drums chewing green leaves of some sort. On the other side the boys who had been assembled danced two at a time. When one pair had finished, they approached the arch and presented, first their bellies, and then their backs to the loops of grass. Through these loops the men behind spat the juice of the leaves upon them. The pair then retired laughing to be replaced by two others. This was repeated until all the youths had danced. Apparently this ceremony was in the nature of a reminder of their own initiation period.

This completed the ceremonies for the day, so everyone departed. Those who lived nearby went to their homes. Those who resided farther away prepared to depart the next day. One or two men remained behind to guard and to look after the boys.

During their convalescence they were attended only by men. Women of the village prepared food for them but it was carried to them by men. No woman was allowed to approach the place and the novices were not allowed to approach the village where they might see or be seen by a woman. Strangers were also kept away. The morning following the circumcision they were awakened at dawn and made to dance for a short time. Each following day, so the information ran, they were required to do the same thing. The time during which they danced was lengthened from time to time until at last they danced most of the time from sunrise to sunset.

The day after the circumcision their instruction in adult tribal lore began. They were taught all the secrets of sex and many tribal matters which their elders considered they ought to know. They were to be allowed to return to the village only when their wounds had thoroughly healed and when they had learned perfectly all the lessons they had been taught. This probationary period extended from two to more often three or four months after the ritual. On occasions the class was large and some proved slow to learn. None of the class might return until all had learned their lessons. It was also said that the novices learned a new language during this period—a language which was understood only by the class of that particular year. They changed their

names at this time also, each individual taking for himself a new, and in his own opinion, a very beautiful name. His old name was never to be repeated by him and its use was discouraged in anyone else. To be called by his old name was equivalent to being called a child.

A visit was made to the boys three or four weeks after the ceremony. The wounds were doing well, considering the conditions under which the operation was performed. The swelling had nearly all disappeared, a healthy looking scab had formed, and there was little if any inflammation and no pus. The boys were cheerful and greeted their visitor with smiles. They were proud of their initiation and exposed their wounds without hesitation.

A small stockade had been built around the hut where the boys remained, similar to the one near the village. The grass was worn from the ground around the place and numerous improvised seats had been constructed near the entrance. Parts of the costume of the "Magish" were to be seen lying in front of the hut. A stick had been placed across the entrance to the enclosure about three feet from the ground and from it were suspended two linked loops of grass, like those mentioned in the ceremony for the youths who had already been initiated. These loops the boys were required to touch to their back whenever they passed through the entrance.

When their visitor (H) arrived, about seven-thirty in the morning, the boys were resting from a dance. They soon recommenced and went through a long and varied repertoire, singing all the while in voices that constantly cracked under the strain. They were still dressed in the grass skirts in which they appeared on the morning of the ritual.

At the end of about three months the information was sent out setting the date for the return of the boys to the village. What took place upon their return is from the narrative of the father.

Many people attended the dancing and revelry which marked this event, although neither the crowd nor the hilarity was quite like that seen at the first dancing. The dance commenced at sunset, however, and continued until nearly morning. During the early part of the evening the initiates gave a demonstration of dances and songs which they had learned during their probation.

They were then presented with the gifts the father had been keeping for them. Some time late in the evening each was approached by the father and told where a woman was waiting for him. Each went to his assigned woman who taught him the technique of sexual intercourse according to BaJok notions. The woman in each case was a friend of the father (probably in his marriage group) and she submitted herself as a matter of duty and not for the pleasure which she might derive from it. The BaJok women quite seriously declare, in fact, that they get no pleasure from intercourse with a novice.

The day following and thence forward these two boys were considered as men of the village. They built a house of their own in which they slept and they were privileged to marry if they so desired.[8]

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[8] The women of the tribe are said to have their own circumcision rituals for young girls. These take place at the time of the first menstruation. Information was not forthcoming as to whether the clitoris is clipped off or not, but it is known that in certain Bantu tribes circumcision of women consists of this practice as well as making an incision into the labia minora. One of the writers (Y) has seen well-authenticated photographs of such a ceremony from East Africa. After the rituals, the women of the BaJok are also put through a probationary period to be followed by instruction in sexual intercourse by some man who is a friend of the father. The men report, as do the women cited above, that they derive no pleasure from the instruction. In the case of individuals of low caste, these final features of the initiation are usually omitted.

THE MOUND BUILDERS: WHENCE AND WHEN

By VERNON C. ALLISON

THAT explanation of an event or condition which best satisfies the available information in regard to it may be called a theory; it is a tool for the presentation of the evidence for and against in a coherent manner. Such a theory is here deliberately set up to account for as many of the known facts relating to the Mound Builders, as it is possible to bring into apparent agreement with one another; new data tomorrow might force a change in the arrangement.

A definite science deals with facts, and a fact may be defined as an occurrence or happening which, having happened once, may occur again if exactly the same conditions are re-established. Geology is not an exact science because of the time element involved; we see a certain geological process in operation today and see its results—erosion or sedimentation, for example. We also see apparently identical erosion or sedimentation results which we know, from their location, position, and surroundings, occurred long ago. The long intervening period of time, however, prevents us from being positive that the ancient erosion or sedimentation occurred under exactly the same conditions governing erosion and sedimentation today. All the evidence so far produced, however, indicates that the natural laws operated in the past in the identical manner in which they are operating today; there are certain major erosion and sedimentation cycles which have been operating for a vast period of time and the present is merely a definite part of one of these recurrent cycles. Thus geology utilizes a principle uniformitarianism or continuity. The principle of continuity will be applied in this paper to the problem of the Mound Builders.

The mound, built either of rocks of such a size that they can be carried by one man or built of earth carried in skins or baskets, was the first imposing enduring monument erected by primitive man; it required few tools; it is known the world over, of many sizes and uses, and for this reason it is not sufficiently definite to lend itself to the present task of attempting to identify the Mound

Builders. The simple mounds in the Mississippi basin are therefore disregarded.

The complex earthworks of Ohio were practically all built on high places adjacent to river bottom lands which, from the evidence yielded by the ancient village storage pits and refuse dumps, mainly grew maize or Indian corn. A great many of the large complex mounds group themselves in two classes. The first class has the following characteristics:

(1) The walls are almost entirely of rock.
(2) The walls are not thick.
(3) The openings in the walls occur only at strategic points.
(4) There are generally storage ponds or dug holes within the enclosure.
(5) The ditch, if present, is inside the wall and may be discontinuous. The ditch was used in both classes only rarely as a primary defense, only when the slope of the outside hillside was so gentle as to demand the additional protection of an exterior ditch. The inside ditch, in this class of enclosures, was merely a convenient place to get what little dirt may have been used to finish the rock wall, it saved the labor of carrying this dirt up from the river bottom—a distance of sometimes almost 500 feet.
(6) There is little sign of village occupation within the enclosure.
(7) These are true forts or strong places. Examples: Spruce Hill Fort,[1] Ohio; Stone Fort,[2] Glenford, Ohio.

The second class of complex earthworks, also well exemplified in Ohio, are possessed of the following characteristics:

(1) The walls are either constructed entirely of dirt or have only a rock reinforcement.
(2) The walls are thick and massive.
(3) There are many openings in the walls and these openings apparently disregard strategic points and, from their location, could not have been used for entrance or egress.
(4) There are generally water storage ponds within the enclosure.
(5) The ditch is always present and is inside except when disadvantageous slope makes an outside ditch necessary as additional protection to that offered by the wall.
(6) There are many signs of village occupation within the enclosure.
(7) These are fortified villages. Examples: Fort Hill,[3] Ohio; Fort Ancient,[4] Ohio; and probably Miama Fort,[5] Ohio; and Butler County Fort,[6] Ohio.

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[1] E. O. Randall, The Masterpieces of the Ohio Mound Builder. 1908, p. 18.
[2] Randall, p. 44.
[3] Randall, p. 32.
[4] Randall, pp. 77–82.
[5] Randall, p. 54.
[6] Randall, p. 63.

The interior ditch has caused considerable controversy among archaeologists who have worked in Ohio. Peck[7] remarked,

> But what people, savage, barbarous, civilized, or enlightened, ever constructed a fortification around five or six hundred acres, *with a ditch on the inside!* Or what military people made twenty or thirty such forts, within two or three miles. . . . .

Fowke[8] comments on this passage as follows,

> If the author just cited had restrained his impatience to the extent of modifying the exaggerations in his second paragraph, and especially in regard to the last two sentences, his opinions would have more weight . . . . as they deserve to do.

Further on, however, Fowke[9] admits that the inner ditch must have handicapped instead of assisted the defender. Squier and Davis[10] thought that the interior ditch indicated sacred works and the exterior ditch meant a defensive work. They[11] also observed that in the case of the larger enclosures, the

> ditches, when they exist, are nearly always interior to circles or exterior to squares;

also, that the ditches are always interior, when there is one, in the case of the small, isolated, fairly regular, circles and squares. Major Long[12] offered various objections to the works about Piqua being defensive works. Morgan[13] offered a suggestion which seems somewhat satisfactory to the present author. Morgan said that the Mound Builders built "long houses," similar to those of the Historical Iroquois, upon these embankments. These probably had no outside entrance; the entrance faced the center of the enclosure and was probably protected by a drawbridge across the inside ditch—the moat; the many unexplained gaps in the walls of the fortified villages were the divisions between the

[7] J. M. Peck, A Gazetteer of Illinois, p. 35.

[8] Gerard Fowke, Archaeological History of Ohio, 1902, p. 70.

[9] Fowke, p. 153.

[10] Squier and Davis, Ancient Monuments of the Mississippi Valley. Smithsonian Institution Reports, 1848, p. 54.

[11] Squier and Davis, p. 8.

[12] Major Stephen H. Long, Expedition to the Source of St. Peter's River, 1823, p. 50.

[13] Lewis H. Morgan, Ethnical Periods, A.A.A.S., 1875, p. 206

"long houses"; each "long house" was occupied by a family or tribal group of some king. Fowke[14] objects to this view and insists that no clay was used for the outside coating of these "long houses," as assumed by Morgan, and that the embankments are made of loam and gravel, which possess too small an angle of repose to allow of much width at the top of the bank. In regard to Fowke's statement above, it is of interest here to give Wissler's comments on certain pits in the United States.[15]

> Numerous depressions in the upper half of the Ohio Valley have been regarded as old house sites and recently Sterns located rectangular house pits in Nebraska, but, except in the last case, our knowledge is not definite, and the very perishable nature of the structures so far observed makes further discovery extremely difficult.

Again Wissler[16] says,

> It is true that a number of earthworks are designated as forts, but their use as such is largely hypothetical. Perhaps the best known example is Fort Ancient in Ohio, which is one of the most imposing earthworks in the world.

The smaller, isolated, geometrical earthworks scattered over the hill tops of Ohio may have been lookouts, shrines, signal stations, astronomical observatories, etc.; they are obviously not forts on account of distance from water, the menace of surrounding hill-tops and ravines, etc. (Fowke[17,18,19] and Short[20].) Wissler[21] states

> at the time of discovery the native villages in the southern half of the eastern maize area were circled by palisades. In the north the Iroquois possessed such fortified towns and even in New England they were known. It is now

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[14] Fowke, p. 158.

[15] Clark Wissler, The American Indian, 1922, p. 110.

[16] Wissler, p. 117.

[17] Fowke, p. 154.

[18] Fowke, p. 170.

[19] Fowke, p. 220.

[20] John T. Short, North Americans of Antiquity, p. 52.

[21] Wissler, p. 117.

[22] Lewis H. Morgan, Indian Migrations, *in* "The Indian Miscellany" by W. W. Beach, pp. 203, 243–245.

[23] Frederick Starr, A Shell Gorget from Mexico, Proc. Davenport Acad. Science, p. 173; also A.A.A.S. and Bul. Am. Geol. Soc.

[24] Squier and Davis, p. 301.

[25] Morgan, Periods, p. 206.

considered that certain rings of earth in New York State mark the sites of palisaded villages, and there is reason to believe that similar redoubts in the Ohio Valley had a like origin.

The source of the Mound Builders has been thought, by many investigators, to lie to the south or southwest of Ohio. Morgan[22] considered the Mound Builders as possible village Indians from New Mexico. Starr[23] says they were probably allied with Central American and Pueblo peoples. Squier and Davis[24] also suggest a connection with the higher cultures of the New World. Morgan[25] again says that the Mound people were the same as the Pueblo stock. Foster,[26] on the contrary, derived the Pueblo people from the Mound Builders. Fowke[27] disagrees with these views:

> The theory of an offshoot or colony from the far southwest is even more untenable; for while it is possible that the above tribes (Cherokees and Mandans) may be descended from the Mound Builders, the Mound Builders themselves seem to have nothing in common with either the Aztecs or Pueblo Indians beyond a few small personal possessions which can easily be accounted for by the extensive traffic of aborigines. The theory would never have gained such strength had Morgan personally examined the Scioto valley enclosures before making his "restoration."

Wissler,[28] however, does not doubt an historical connection between the agricultural areas of Mexico and of the eastern United States. Speaking of mining and quarrying operations in the United States and Canada, Wissler[29] further says,

> Practically all such operations were confined to the eastern maize area and the Pueblo habitat.

Read[30] writes:

> The size of these enclosures seems to be related to the size of the arable land in the adjacent valley, and hence to the size of the village communities that could be supported from them. It seems to be a reasonable inference that these enclosures were strongholds, for protection and observation, and designed to meet the normal wants of small communities of agriculturists, and that they were not erected to meet the exigencies of a campaign. The great number of them, and the small size of each, scattered along the bluffs of a single stream, like the Cuyahoga, would tend to confirm this conclusion.

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[22] J. W. Foster, Prehistoric Races of the United States, pp. 98, 186–188.
[27] Fowke, pp. 470–471.
[28] Wissler, p. 12.
[29] Wissler, p. 128.
[30] M. C. Read, Archaeology of Ohio (1886–1892?), p. 82.

There are two great apparent similarities between the Pueblo Indian and the Mound Builder: they both depended largely upon maize cultivation for their livelihood, and both lived in fortified high places overlooking their corn-fields; the Pueblo on his mesa, the Mound Builder upon his plateau highland, in Ohio. Their fortified villages consisted of a ring-shaped group of houses facing an inner court; these houses opened only to the inside of the court; in the case of the Pueblo, adobe construction permitted of thick, strong walls but in the more rainy country, Ohio, the earth construction was not so good, so that, as an additional precaution, a ditch was placed between the opening of the house and the inner court.

Wissler[31], referring to mounds, says:

> First the pyramidal mound for burial seems to extend from northern Mexico to the Isthmus and then to recur in Colombia, passing through Ecuador and down into the coast of Old Peru. At least in one part of the Inca domain we find buildings upon them. In fact, their general absence in Old Peru is accounted for by the rocky nature of the country, which affords sites of natural elevation to which buildings were frequently adjusted by terraces. It may be of interest to note that the pyramidal mound both for burial and building sites extends up into the Mississippi Valley as far as the famous Cahokia of Illinois, and that this distribution is continuous with the general mound area of the upper valley. In other words, the occurrence of mounds of this type has a generally continuous distribution from the Great Lakes of the North to the coast of Old Peru of the South. Throughout, they are most numerous in level districts.

Further:[32]

> Studies among the Pueblos of New Mexico have indicated that when we know more of that area we shall find a period of single detached adobe or stone rectangular houses preceding the composite pile of the modern pueblo. In fact, the Pueblo Indians of the present show a disposition to revert to the detached house, which does not differ materially from a single unit in the village structure. In like manner, we find in Peru a grouping of single house around a court so as to form a complete enclosure, and the ground plan of these is not essentially different from those of the preceding structures. Similar conditions have been reported from the Maya district.

Again:[33]

> In the Pueblo region the houses were so placed, either in cliff recesses, upon mesas, or piled upon each other in such a manner as to make other defensive works unnecessary.

[31] Wissler, pp. 105–106.
[32] Wissler, pp. 106–107.
[33] Wissler, p. 117.

The chief objection raised to the theory of a southwestern origin was that there was insufficient evidence of any connecting link between St. Louis and the southwest (Fowke[34]). Since that time Thoburn[35,36] has found many traces in Oklahoma of a people who entered that State from the southwest, passed slowly across the State and left Oklahoma at the eastern edge. These people preceded the Caddoan who in turn preceded the modern Siouan, in Oklahoma. These early people built "long houses" and "ceremonial" mounds even as the historical people of the northeast (Iroquois), and had pottery crudely similar to Iroquois pottery. Here, then, is evidence of a people who passed from the far southwest, over the country of the Mound Builder, and were found, in a modified form, occupying the Mound Builder country when the white man arrived. Harrington[36a] has found abundant evidence of a people who inhabited the shallow caverns and overhanging rock shelters of the Ozarks and who had eleven out of nineteen characteristics in common with modern Indians to the North and Northeast; these people, the "Ozark Bluff Dwellers," occupied these shelters long before the Mound Builders are thought to have lived in the Mississippi Valley; the date of the Bluff Dweller occupation was from 1226 B. C. to about 520 A. D. (Allison[36b]). Here also are the traces of a people who antedated the Mound Builders, who, together with the village Indians of the southwest, were probably derived from a common parent stock—whose chief characteristic was maize culture. These people also apparently passed certain of their cultural characteristics along to tribes which occupied the northeastern part of the United States in historical times.

A people had been rapidly developing village life dependent upon maize culture. Maize was gradually developed from a grass whose nearest apparent ancestor, theosinte, grows best in upland

[34] Fowke, pp. 470–471.

[35] Joseph H. Thoburn, Curator Oklahoma State Archaeological Museum and Secretary Oklahoma State Historical Society.

[36] Vernon C. Allison and Vance Randolph, The Prehistory of Crawford County, Kansas.

[36a] M. R. Harrington. The Ozark Bluff Dwellers, American Anthropologist, Vol. 26, No. 1, Jan.-March, 1924.

[36b] Vernon C. Allison. The Antiquity of the Deposits in Jacob's Cavern. Amer. Mus. Nat. Hist., Anthro. Series, 26, pt. 4, 1926.

regions of not too warm a temperature. The origin of the maize growers is referred to the Valley of Mexico, which represents such a country. Maize enabled the maintainence of a much denser population; increased population led to organization, and this in turn to increased protection and power and opportunity for the development of more intricate handiwork. Thus the village Indians slowly spread against the opposition of the previously established but feebler hunting tribes which surrounded them; they carried their maize culture with them.

The gradual spreading of these people was suddenly interrupted by an adverse climatic change, which forced them to seek the shelter of cliffs and caverns on the eastern fringe of the northern front but made the present somewhat arid Southwest much more hospitable than today because of increased precipitation. These people on the eastern fringe were held more or less stagnant but those in the Southwest developed rapidly and became populous. Then another climatic change restored present climatic conditions. The return of semi-arid conditions to the Southwest forced the inhabitants of that region to attempt to forestall the aridity and failing food supply by developing irrigation; they were only partly successful and the lessened food supply forced a portion of them into marginal migration. The people who had been held in the shelters and caverns in the eastern fringe, the Ozarks, by the inclement climate, were freed by the return of the present day genial climatic conditions and left their shelters; probably continuing their original spreading movement in an outward direction from the Valley of Mexico, or, toward the northeast. Some one or more of these migrating peoples, with their maize culture, developed into the Mound Builders. They reached the Mississippi basin where they found the recent alluvial valleys very suitable for the raising of maize. In Ohio, where the river bottoms were narrow, they developed a somewhat modified "fortified village on the high place overlooking the low lying corn field" habitation. In the larger river bottoms, such as the Mississippi, where the bluffs were too far away from the maize fields, they built in the middle of the fields mounds large enough for a fortified village to be built upon their top.

When the Mound Builder people first entered the alluvial river bottoms, these were fairly recent and practically devoid of forests. A climatic interval[37,38] had just elapsed that was characterized, in the country roughly north of 35° N., by a cool, rainy period at first, followed by a cool, windy climate; this interval was marked by a greater moisture-fall in that part of the southwestern United States now semi-arid. During this period the part of the United States north of 35° N. could only support a scattered hunting population. The marauding activities of such people caused the village Indians to continue the already established custom of living in fortified high places overlooking their fields. The time of this whole cool interval was from 1226 B. C. to about 520 A. D.[37,38].

The high water of the first part of this period had deposited the recent alluvial plains of the rivers in the Mississippi basin, and the cool, dry, windy weather of the second part of the interval had prevented much forest growth upon these alluvial plains. When the Mound Builders first reached them they were so lightly forested as to make good maize fields; the adjacent high lands, however, had sufficient forests to furnish the timber required in the construction of the "long houses" in their fortified villages.

The climate began to ameliorate about 520 A. D.; the temperature slowly rose and the moisture-fall slowly increased until the present climate developed. As the climatic conditions improved and the soil in the recent alluvial bottoms matured, the forests started encroaching upon the maize fields; a point was finally reached where the Mound Builders, with their crude tools, were unable to stay the advance of the trees and the forests captured the maize fields. The Mound Builders were then forced to abandon their agricultural life in this region. Part of them resorted to a more or less hunting life and as the country could only support a part of the population, as hunting people, that it could as an agricultural people, part of the Mound Builders may have

[37] Vernon C. Allison, Climatic Pattern of Cenozoic Times, Pan-Amernica Geologist, vol. XLIII, April, 1925, pp. 205–216.

[38] Vernon C. Allison, Quaternic and Tertic Chronology, Pan-American Geologist, vol. XLII, October, 1924, pp. 199–216.

migrated westward (Mandan?) and part southward (Cherokee?). The portion who stayed in the upper part of the Mississippi basin as modified hunting Indians still built or utilized the burial mounds; they no longer had extensive maize fields, so they no longer built the fortified villages upon the hill-tops; they did, however, retain their "long houses" (in a modified form), developed a kind of palisaded village and later became the historical Iroquois.

It is appropriate at this place to present the evidence upon the following points:

(a) A recent climatic change;
(b) its effect upon the river bottom land;
(c) what became of the Mound Builders.

The climatic change is recorded in the growth rings of very old trees, the growth layers and shape of stalagmites that grew during this period in places exposed to the weather, and fossil fauna and flora.[39] The change was general over at least the Northern Hemisphere. The growth rings of trees consist of two layers; a red band, of uniform width for each tree and almost independent of the ordinary moisture-fall, representing the dry or non-growing season; a lighter band representing the wet or growing season and increasing in width with an increase in moisture-fall in the case of trees growing where the unusually large amount of moisture-fall for an unusually wet year can not be stored up for use in the following less wet years—trees with no impervious under-pan to interfere with good drainage. The Sequoias of the Pacific slopes are good examples. In regard to stalagmites, the moist, up-turned face of a growing stalagmite records the difference in color between the wet season with its air relatively free from dust or the ground water charged with much iron, and the dry, dusty season with little ground water and that fairly free of iron; also, the better the evaporation conditions, the smaller the diameter of a stalagmite growing under a given drip. Such stalagmites are found in Jacobs' Cavern,[40] near Pineville, in southwestern Missouri, and in Bear's

[39] Allison, Climatic, p. 206.
[40] Allison, Quaternic, p. 206.

Caverns, near Hillside, Pennsylvania. The fossil fauna and flora of Sweden also show this climatic change.[41]

Read[42] discusses the effects of the advancing forests upon the the Mound Builder' maize fields as follows.

> These old agriculturalists had their enemies against whom they were compelled to contend, the extension of the forests, the intrusion of wild beasts, and the aggressions of more warlike tribes. The extension of the forests is mentioned because it may have been one of the most efficient causes in the final expulsion of these people. Many attempts have been made to find causes for the existence of the treeless prairies of the West. A more natural inquiry would be, how came the other sections to be covered with forests? An herbaceous vegetation doubtless preceded the forests and has been slowly restricted by the growth of the latter. In the Southern States extensive regions which sustained only an herbaceous vegetation when first explored by the whites, are now covered with trees. Early agriculture attained its highest perfection in regions too arid for forest growth, where facilities were afforded for the artificial irrigation of the cultivated land, and was practically restricted to the treeless regions until better cutting tools than our mound builders possessed enabled the agriculturists to successfully contend with forest growth.
>
> These alluvial plains, not long ago covered with water, would be the last to be encroached upon by the forest, and were probably treeless when first subjected to tillage. Land could not be cleared of forests, and its intrusion could with difficulty be resisted with such tool as have been described above [stone tools]. Crowded out by any causes from these regions, they could not transfer their agricultural operations to the treeless plains of the West, where the rank growth of grass would present so formidable obstacles and where countless herds of buffalo roamed. Certainly they sought the alluvial valleys, poorly adapted to the growth of grass, admirably adapted to the growth of Indian corn; they fortified adjacent bluffs, so selected as to command a view of the cultivated fields below, from whence they could observe the intrusion of man or beasts and make provision against the attacks of enemies from the table lands.

Further, Read[43] states,

> Mr. Smucker has known the works for more than fifty-five years, and has hunted over them when covered with the primeval forests. He reports that they were covered with a mixed growth of walnut, sugar-maple, beech, oak, and wild cherry trees, some of which, when cut down, showed that they were over five hundred years old, which would indicate not less than one thousand to fifteen hundred years since the commencement of the intrusion of the forests (there is a burr oak, four feet and four inches in diameter four

[41] Allison, Quaternic, p. 212.

[42] Read, pp. 81–82.

[43] Read, pp. 84–86.

feet above the uphill ground surface, about half way up the middle of the North side of Monk's Mound, near St. Louis, at the present time; a movement is now in progress to count the growth rings of this tree by removing a small radial core and thus not injuring the tree). It is believed that General Harrison first called attention to the fact, in regard to similar works, that a mixed forest indicated a growth of at least two or three generations of trees. A new natural forest is almost if not quite uniformly composed of one variety only. and the change to a variety of species is made very slowly. But was this ground ever occupied by forests? Their erection with mound-builder's tools, if it involved the clearing of a forest as a preliminary work, is so nearly impossible that we cannot imagine it would ever be undertaken. It involved not only the clearing of these lands of the forest, but also the neighboring lands which were to be subjected to tillage. It is with the utmost difficulty, in moist and tropical climates, that men armed with the best of steel tools made a successful battle with the forests. It is much more reasonable to suppose that these works were originally located in a treeless region, and the works evidently of the same age scattered over the country indicate that this treeless region was of large extent, covering probably most of the alluvial valleys. The inference would follow that the abandonment of the region marked the time when the slow intrusion of the forests reduced the amount of tillable land below the necessities of the community, the time since their abandonment marks the whole period of the forest growth upon the alluvial bottoms. If the question is asked, how long is this period? the only answer that can be given is that in the term as applied to human history, the time was long, how long, no one can tell.

Other evidence in favor of the forest theory is given by Randall:

> The Structures were almost without exception completed before being abandoned; they left no unfinished work, from which it might be inferred that they did not depart prematurely nor in haste.

Fowke[44] criticises Read's theory of recent forestation and calls attention to the large amount of decayed timber found in the mounds. The cutting of the relatively small amount of timber from the hill-tops, to be used structurally, is, however, a very different thing from clearing large areas of the forests. Jennings[45] says,

> Another point of interest in this connection is that the forest might not be able to occupy purely mineral soil immediately, as it was left by the retreat of the glaciers. On Presque Isle, which, however, is sand at first, it takes some time for the soil to become suited to the growth of pines or oaks, although I can have no doubt that disseminules of the pines are constantly

[44] Fowke, p. 122.

[45] O. E. Jennings, private communication: partially based on "A Botanical Survey of Presque Isle, Erie Co., Pa.," Annals Carnegie Museum, 5:321–328, 1908.

getting into the new territory. It takes about forty years to get a pine forest started and about a hundred years to establish a real white pine forest, and this is replaced by the black and red oaks at the age of about 250 years. Flood-plains, alluvial soils built up along streams and rivers, usually pass through a number of preliminary stages before passing into the mature climax sugar maple-beech forest. Ordinarily these stages are dominated by willows and sycamores; these are displaced by white elm and red maple; and this latter forest in turn by the sugar maple and beech as the soil becomes elevated sufficiently above ordinary floods to be moderately moist rather than wet and with more or less forest humus commingled with it. I have an idea that along our streams in Ohio and Pennsylvania this process of building up a climax flood-plain forest takes not less than four or five hundred years. It took about 600 years for Nature to begin to plant hemlocks on Presque Isle. On an artificial mound, however, the conditions are different and a climax forest could establish itself more quickly. If the low lands were in grasslands the invasion by forests would be determined more than anything else by the water content and that might be involved in either rapid or slow changes. There are still prairies near Sandusky, Ohio.

Taylor[46] has made a number of interesting and keen observations anent the peculiar and significant growth habits of the trees in the Ozark country, especially near Pineville, Missouri. These peculiarities, when interpreted from an ecological standpoint and with the geology of the region in mind, yield valuable evidence in regard to the recent climatic change under discussion.

This region consists of the remains of an old plateau which has been so completely dissected by the streams that very little of the original flat upland surface is left. This country was formerly covered to a depth of several hundred feet more of Boone Chert than exists there today; this Boone Chert is composed of bands of chert, from four to six inches thick, interspersed with layers of limestone of several times that thickness; Dome Cavern, about one mile towards Pineville from Saltpeter Cavern, illustrates this very well. Through the course of ages the limestone has dissolved and flowed away in solution, leaving behind the blanket of fragments of the little soluble and very brittle chert which covers the hill-tops today.

A cool, rainy period, which started in 1226 B. C.,[47] as shown by the stalagmites which grew in caverns in this vicinity and recorded

[46] Jay L. B. Taylor, Forester and Engineer, Pineville, Mo., private communication.

[47] Vernon C. Allison, The Antiquity of the Deposits in Jacobs' Cavern, American Museum Anthropological Series, Vol. 26, Part VI, 1926.

the climatic changes occuring during their growth, washed the soil from the hill-tops down into the flood-plains of the streams. These flood-plains are from one half to one mile wide and lie about two hundred feet below the ridges; they contain loose soil and gravel to an unknown depth. Later, the cool, rainy period was succeeded by a cool, windy period which ended about 520 A. D. The dust storms of this cool, windy period deposited a thin dust or loess mantle over the region; the annual dust-fall today is over ten ounces for each square yard and this vicinity can not be called a dusty country. After (and probably somewhat before) 520 A. D. grass grew on these hill-tops, covered with a scant soil deficient in humus, until the soil and climate became favorable to tree growth; in addition to the annual dust-fall the quantity of soil slowly but steadily increased through the weathering of the chert fragments, especially the smaller ones, and the action of the vegetation—mostly grass—until there is now from fourteen to eighteen inches of rocky soil underlaid by a hard-pan said to consist of a decomposed or modified chert.

The first trees to gain a foothold in this poor, humus-lacking ridge soil, were the pines which advanced along the ridges, probably with a flanking fringe of juniper and red cedar at the edges of the ridges, near the limestone escarpment. Somewhat earlier than the advance of the pines along the ridges, the broad-leaved hardwoods invaded the country along the river courses and, by the time the pines had become firmly established in the poor soil on the ridges, these river bottom forests had long passed through the forestation cycle described by Jennings above and had reached the mature, mixed, climax forest type—the oak forest type in this region.

The pine forest, firmly established on the ridges by 1840, was a normal pine forest, in its prime, and contained many trees well over four feet in diameter; it may be that where there happened to be left flat surfaces on top of the ridges—remnants of the old plateau surface—and where there was some means of approach up from the river bottoms—ravines, with soil covered slopes, for example—the oaks from the river bottom mature, climax forest—especially the burr oaks—had succeeded in gaining a foot hold upon the ridges by this date.

In 1840 United States troops tried to prevent "squatters" and unauthorized persons from cutting the timber in this section and in the course of the resulting "Pine War" extensive forest fires burned practically all the ridge timber; some of the old stumps, over four feet in diameter after being burned over, were still to be found as late as 1895 but the pine forests, which gave Pineville its name, were gone.

As usual after a forest fire a new dynasty of trees captured the hill-tops; the growth of the pines had added sufficient humus material to the soil to make it suitable for the growth of the broad-leaved hardwoods and the heat of the forest fire had killed off all vegetable life, including the seed of the pine, to a considerable depth. As a result of these forest fires, then, the mature, mixed, climax forest—the oak type trees in this region—river bottom forest, gained the ridges and are found there today. A few scattering pines are left but the oaks do not grow as tall as the pines and for this reason the young pine tree, after growing taller than the surrounding oaks, is deprived of the wind-break protection formerly offered by the pine forest and, insecurely fastened in the thin layer of soil, it is easily blown down. This is probably the reason that, with the exception of one or two pine trees with a diameter of about two feet, all the pines in this section are not over one foot in diameter; they outgrow the wind-break protection of the shorter oaks and succumb to the wind; they are, however, of the same species as the earlier pines which left the burned over stumps of a greater diameter than four feet.

At the present time, then, the hill-tops in the Pineville region are covered with many oak type trees and only a few immature, scattering pines; the scanty soil and near-by hardpan produces cramped, contorted, and gnarled tap-roots. These distorted and malformed tap-roots frequently decay and the decay progresses up the bole of the tree; a large part of the present hardwood timber is thus defective—hollow or rotten at the center—from this cause.

This shallow soil is also the probable explanation for the very curious and intense aversion, in this locality, to permit trees to grow near the house. The natives vaguely say that "trees around

the house are not healthy." These people either do not recognize the fact that they know the trees to be dangerous because so easily blown over on top of the houses—on account of the thin layer of soil in which they cling—or else they have a far more subtle sense of humor than they are ordinarily credited with; the former is more plausible.

The above ecological evidence supports the recent climatic change as does also the archaeological information yielded by the remains of the prehistoric Ozark "Bluff Dwellers" who occupied the shelters and caverns of this region.

The Ozark Bluff-Dwellers, of southwestern Missouri and northwestern Arkansas, had maize. The caverns and shelters which they occupied were formed in the hard St. Joe limestone lying on the soft Eureka shale. This shale is so dry that ordinarily perishable objects are preserved. The Bluff-Dwellers used immense quantities of dried grass to line their storage pits, graves, etc., and any quantity of this dried, cured grass, of a reddish color, can be found in these shelters today. This grass is of a kind resembling the common "blue stem" (some of this grass may be a sedge) and does not grow in forested regions. The large quantity of this dried grass present in these shelters shows that the Ozark country was not forested when occupied by the Bluff-Dwellers and this was from 1226 B. C. to about 520 A. D.[48]

The question of what became of the Mound Builders has been considered by several investigators. Fowke[48a] suggests that the Cherokee (south of the Mound Builders' country) and the Mandan (west of the Mound Builders' country) may be descended from the Mound Builders. Possibly the historical Iroquois, who retained a form of the long houses, occasionally buried their dead in the single mounds, sometimes built fortified villages, and respected the ancient earthworks, were descended from the Mound Builders.

Wissler traces the distribution of agriculture and the use of turkey-feather mantles from Mexico to the North Atlantic states; connects the long house of the Iroquois with its southern

[48] Allison, 1926.

[48a] Fowke, pp. 470–471.

equivalent; notes the coincidence of palisaded villages with the Eastern maize culture; and the association of temples with mounds throughout the area of intensive maize culture[49]. He finds the grooved axe lacking on the Pacific slope but shared by the Pueblo, Plains and Eastern maize-growing Indians. With respect to village organization, the clan and moiety system, and kinship terminologies, he likewise establishes a bond between the Southwest and the East, including the Iroquois. The Iroquois share with Pueblo tribes the practice of monogamy, while the ceremonial use of the black drink once more links the Southwesterners with Central and Eastern corn planters.[50]

Wissler[51] sums up the Iroquois culture as follows:

> The Iroquois tribes were even more intensive agriculturists and potters; they made some use of the blowgun; developed cornhusk weaving; carved elaborate masks from wood; lived in rectangular long houses of a peculiar pattern; built fortifications; and were superior in bone work; maintained a series of masked secret societies, a corn harvest festival, and, above all, a highly developed political organization or "League of the Six Nations," which made systematic conquests.

The time of the hospitable climate in the now semi-arid Southwest and the simultaneous inhospitable climate in the Central part of the United States—Mississippi basin, for example—was from 1226 B.C. to about 520 A.D.[52,53] This was a time of great developement of the village Indians of the Southwest but only a hunting, marauding, people occupied the central part; this was also the time of the Ozark Bluff-Dwellers. The time when the present semi-arid conditions were completely reestablished in the Southwest was about 520 A. D.; the lessened food supply of a now semi-arid country forced a part of the population into marginal migration.

The inhospitable climate in the Mississippi basin reached a climax about 520 A. D., when the moisture-fall reached a minimum. For some time the arid, cool climate had favored a grass vegeta-

[49] Wissler, pp. 13, 59, 110, 115–117.
[50] Wissler, pp. 123, 133, 158, 165, 186, 168, 187, 195.
[51] Wissler, p. 237.
[52] Allison, Climatic.
[53] Allison, Quaternic.

tion in the newly formed alluvial river valleys. A people of pronounced characteristics, but with the basic traits of maize culture, discovered this situation, favorable to growing their maize, and rapidly occupied and flourished in the region. When the present climatic conditions were restored, about 520 A. D., and the increasing moisture-fall and the accumulated humus material in the soil (from the growing of grass and maize) reached a point where it was more favorable to growing trees than maize, the Mound Builders began their long losing fight to stay the advance of the forests with their stone (and some few copper) tools. Jennings believes that it requires four or five hundred years (at least) to establish a climax flood-plain forest along the streams of Ohio and Pennsylvania; the Mound Builders fought their losing fight, then, between about 520 A. D. and somewhere around 900 A. D. to 1000 A. D. They were so well established in 520 A. D. as witnessed by their ensuing long struggle with the forests, that it apparently requires an equal period of time, 500 years, to account for their firm implantation. 500 years back from 520 A. D. is 20 A. D.; the Mound Builders then entered the Mississippi basin about the beginning of the Christian era.

There is a way of roughly checking this later date—the time when the Mound Builder culture succumbed to the advancing forests. Taking Read's[54] minimum estimate of two generations of trees required to establish the mature climax forest on the Ohio mounds, a period of two entire tree generations lies between the present and the passing of the Mound Builders. A majority of the upland trees near Pittsburgh, Pennsylvania, are white oaks; they are all about three hundred years of age and they are all old men—they are dying; these trees are about three feet in diameter. It is thought that the white oaks came into this region about three hundred years ago as a result of a forest fire which destroyed the forest of that time and also all seed in or upon the surface layer of forest soil.

Exactly what causes a tree to die is not well understood but it is thought that a tree continues to grow until the amount of tree material is in equilibrium with its moisture supply. If it can

[54] Read, pp. 81–82.

be so visualized that a tree attains such a size, finally, so the tree is unable to elevate enough moisture to grow new wood, then, in that year will the tree start dying—at the top, where it is hardest to raise the moisture up to. This suggests that the better the moisture conditions, the longer the normal life of a tree, and it is probable that on the mounds of Ohio, with their great depth of favorable soil, a tree would live nearer five hundred years than three hundred years. Read's two generations of trees, then, give about one thousand years since the mounds in Ohio were abandoned to the forests. One thousand years ago is about 900 A. D. The Mound Builders thus occupied the Mississippi basin from about 1 A. D. to 900 or 1000 A. D.

The Mound Builders were derived from the same remote (relatively) stock that produced the Pueblo Indians. They occupied the Mississippi basin during approximately the first one thousand years of the Christian era and were finally disseminated by the results of climatic changes. Part of the Mound Builders may have gone south (Cherokee?) and part of them may have gone west (Mandan?) while part may have remained in New England (Iroquois?). They all retained some of the maize culture of the Mound Builders but in the main they modified into more or less hunting Indians.

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BOOK REVIEWS

METHODS AND PRINCIPLES

Der Ursprung der Gottesidee. Eine historisch-kritische und positive Studie. I: Historisch-kritischer Teil. P. W. SCHMIDT. Zweite, stark vermehrte Auflage. Münster in Westfalen: Aschendorffsche Verlagsbuchhandlung, 1926. XL, 832 pp., 1 map.

As the title indicates, this is merely the first volume of the new edition of Father Schmidt's *Origine de l'Idée de Dieu*, originally issued in *Anthropos* (1908–1910) and subsequently as a separate book in German (1912). The next two volumes of the colossal undertaking are designed to deal with the religion of the primeval cultures and of the pastoral nomads, respectively. The latter represent one of Schmidt's three basic post-primeval *Kulturkreise* and, because of their local segregation, admit of separate treatment; while the patrilineal and the matrilineal, as well as later cultures, are intertwined to such an extent as to require a different mode of attack. Accordingly, the final volumes will be devoted to a regional survey of Oceania, Indonesia, and Indochina; Asia; Africa; Western Asia and Europe; North America; Central America; and South America.

It cannot be the purpose of a brief review to discuss in detail the judgments passed by the author on all the principal modern schools of ethnological and theological thought concerned with an elucidation of the subject-matter. The readers of this Journal will appreciate the succinct summary of the methodology and scheme of the *Kulturkreistheorie* (743–766) and will be grateful for the attention given to American data and American views. Father Schmidt defines religion as

> the recognition of one or more personal beings towering above earthly and temporal conditions, and the sense of dependence upon these beings. (p. 5).

As might be expected from his earlier writings, there is an exceedingly detailed exposition of Andrew Lang's views and of the discussion precipitated by his championship of a pre-animistic monotheism (134–487), the result being adjudged highly favorable to Lang's interpretation (485–487). In these sections the author displays an enviable familiarity with the Australian literature, as well as his customary skill in debate.

Two criticisms may be legitimately advanced against the volume before us. In his attempt to cover the field as exhaustively as possible, Father Schmidt not infrequently loses a sense of perspective. Whether one agrees or disagrees, it is interesting to get his impressions of the theories of the French sociologists, of Sidney Hartland, Van Gennep, and Preuss. But how is ethnology to profit from a fifteen-page demolition of one H. Eildermann (713–728), who turns out to be a communistic pamphleteer pathetically ignorant of our science? The social sciences should not be pedantically exclusive, but somewhere the line must be drawn, for otherwise consistency would demand consideration of every writer who deals with religion at all,—a manifestly impossible enterprise.

Secondly, Father Schmidt seems to exaggerate the bearing of certain concrete facts upon his favorite thesis. Precisely because the occurrence of a primeval monotheism is a matter of the utmost importance, we must demand the most rigorous proof of its reality. But with the best of intentions I cannot concede to Father Vanoverbergh's meagre report on Philippine Negrito religion the value apparently ascribed to it by the author (p. 786). Similarly with the Tasmanians: I willingly grant that Father Schmidt has squeezed out of the data everything they can possibly yield; but to my mind they are so poor in content that the ingenuity and erudition lavished upon them seems all but wasted. I cannot help repeating the principle that for a definitive judgment on these elusive phenomena the best ethnographic sources are barely good enough. Inferior material may be useful for tracing the geographical distribution of external features but not for the determination of the subtlest of moot-points.

These blemishes detract from the architectural perfection of the work, but its learning and dialectic ability are as impressive as in all of Father Schmidt's major publications. The positive contributions in the volumes announced for publication will be eagerly welcomed by ethnologists of all schools.

ROBERT H. LOWIE

The Diffusion of Culture. (The Frazer Lecture in Social Anthropology, 1927.) New York. R. R. MARETT. Cambridge University Press (sole American agents: The Macmillan Co.), 1927, 38 pp.

With characteristic urbanity and elegance of style Dr. Marett here issues a rejoinder to Professor Elliot Smith's most recent attacks on Tylor and Frazer. The reviewer fully shares the author's admira-

tion for the former. As regards Sir James's contributions to anthropology, candor would compel me to make many reservations as to Dr. Marett's estimate. On the other hand, I am in thorough accord that Professor Elliot Smith's conception of Frazer as a disciple of Tylor and a continuator of Tylor's thinking is untenable; indeed, I should deprecate it with much greater vehemence. However, the gracious gesture toward the close of the lecture strikes a responsive chord:

> I would add that in real life Professor Elliot Smith has always struck me as a most reasonable as well as otherwise charming man. It is only on paper that he appears to me to let his enthusiasm run away with him.

ROBERT H. LOWIE

The Origin of the State, reconsidered in the light of the data of aboriginal North America. WILLIAM CHRISTIE MACLEOD. Philadelphia. 1924.

In this essay Dr. MacLeod discusses the origin of social stratification, because he holds that "the state or government takes its origin coincident with social stratification." He examines critically two widely accepted theories, which are based on unilateral conceptions. His criticism is, on the whole, conclusive, when he tests these theories by the facts of aboriginal North America.

MacLeod demonstrates that the American evidence[1] lends no support to the conquest theory of the origin of the state, developed by Gumplowitz, Ward, Oppenheimer, and a host of lesser sociologists. He shows, also, that there is no basis for the extreme claims of the diffusionists, who say that aristocracies are largely the results of culture contacts.

A second view maintains that developments within an unstratified group, without the intervention of external influence, bring about social stratification. When he approached this study, Dr. MacLeod tells in his foreword, he believed that the interpretation of political evolution offered by Friederich Engels was fairly secure. This theory

> conceives that the internal segregation of classes . . . . is a consequent of economic changes which bring about a marked associational division of labor—a functional differentiation resulting in a difference in relative power consequent upon progressive inequality in the ownership of the means of production.

[1] New England and Chesapeake Bay Algonkian, Northwest coast, Florida and Louisiana, and the Iroquois tribes.

But he became convinced that this view must be rejected, and he adds to the many counts in the case against a narrow economic determinism.

The older theories are demolished to make way for a new hypothesis, which is another version of the second view. In this, emphasis is placed on the psycho-physical differences between individuals, which bring some persons naturally to leadership.

> The state, or government, takes its origin coincident with social stratification; every state, therefore, is indeed a 'class state,' and *the state* so conceived, *is implicit in human nature.*[2]

Dr. MacLeod thus summarizes his thesis:

> The process of the evolution of social stratification and of the class state which is its political consequent is a socio-psychological process, and its development is independent of any necessary correlation with economic evolution and independent of the diffusion of cultural forms. Aristocracies find the starting point of their evolution in the establishment of the office of chief by enterprising individuals; this office becomes hereditary in the chief's family, and generally chiefs' families tend to intermarry and perpetuate within a narrow circle the prerogative of government. The segregation, within a community, of an aristocracy, means the complementary segregation of the masses as a class of commoners; the tendency of the aristocracy to become a closed caste further segregates rising commoners as a bourgeoisie.

Religious sanctions of the political order, claims by rulers on the labor and products of the people, subordination of assimilated groups, where they appear, are regarded as consequents of the evolution of social stratification, and not as ultimate conditionings.

In criticism of this essay, it may be said, first of all, that it is based on too narrow a view of the problem. It will be difficult to find general agreement for the limitation of the study to social stratification. This limitation leads to the ignoring of large sections of aboriginal America. Many of the Plains tribes, for example, had councils, although they did not have chiefs and aristocracies, unless (by a quibble) one calls all elders aristocracies. To make all social stratification arise because of ascendant individuals and the gradual and cumulative accretion of power in their hands and that of their descendants is an exaggeration, it seems to me. The economic basis of power, and the magico-religious sanctions of authority cannot be totally neglected.

MacLeod has also overestimated (at the same time that he has not clearly differentiated) the psychological variations in the membership

[2] Italics in original.

of a primitive community. Leadership and subordination are not merely born in the blood. They exist in a community of men, who live within different types of society. Some individuals are better fitted than others for the performance of various functions. Consequently, what we find, often, is not the segregation of authority in the hands of a single individual, but the separation of power, on separate occasions, among a large number of individuals.

Furthermore, MacLeod's essay is vitiated by the same methodological error found in the works of the men he criticises: it is based on a unilateral conception of causation. *This* is the way the state arises, he says. Perhaps, in some instances, it does. But such a variegated institution as social stratification, and such a complex of institutions as the state, arise in various ways, among which, of course, may be that suggested by Dr. MacLeod.

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Vererbungslehre Rassenhygiene und Bevölkerungspolitik, Ed. 3. H. W. SIEMENS. Munich: J. F. Lehmann, 1926, pp. 125.

J. F. Lehmann's Verlag has issued a third edition of Dr. H. W. Siemens' well-known little book on Heredity and Race Hygiene. This edition has been thoroughly revised and considerably enlarged. The second edition was translated into English by Dr. L. W. Barker and published by D. Appleton and Co., N. Y. in 1924. We may limit ourselves, therefore, to a consideration of some of the subjects treated at greater length in the present edition.

A new section on the investigation of human heredity gives an interesting discussion of identical twins, a subject which the author has treated more at length in his volume on *Die Zwillingspathologie*. The chief feature of the new edition, however, is Dr. Siemens' discussion of positive eugenics in his section on "Geburtenpolitik." The birth rate in Germany has been speeding downward at a rapid rate, especially among the more cultivated classes. Even the better situated among the rural landholders have reduced their birth rate until in large sections of the country they are no longer a self-perpetuating group. Economic pressure is causing race suicide among the army of government employees and the educated classes in general. How to stimulate an increased birth rate among these classes, whose

loss threatens racial decadence, is regarded by Dr. Siemens as the most urgent problem of practical eugenics. His discussion of tax reform on the basis of family size may be passed by as a measure useful as far as it goes, but quite inadequate to meet the situation. He looks with favor on von Grüber's suggestion that not more than one-fourth of a family fortune should be bequeathed to any one member. A family consisting of less than four children would inherit only a part of the fortune, the remainder going to the State. This regulation might tend to stimulate the production of larger families among the thrifty, provided—and this is a large proviso—they did not devise some means of evading the law.

Dr. Siemens does not believe in the indiscriminate encouragement of large families. He would lighten the burdens of all families with more than three or four children by relief from taxes and, in the case of government employees, by the grant of additional stipends for every child beyond the minimum number. He has not elaborated any general scheme for the eugenic improvement of the community at large. Just how the invidious distinctions which positive eugenics implies are to be made and acted on he does not make clear. The importance of diffusing knowledge of heredity and eugenics is emphasized as an essential preliminary to persuading the public to accept any scheme of eugenic reform. When the urgency of eugenic improvement is sufficiently realized, perhaps some feasible way out of the difficulty will be found.

S. J. HOLMES

AMERICA

Der Kollektivismus der Inkas in Peru. HERMANN TRIMBORN. Sonderabdruck, *Anthropos*, 20: 978–1001, 579–606 (1925), Wien.

About the material culture of the ancient Peruvians we learn more each year. But about their social and economic organization we must be satisfied with the little that the Spanish chroniclers gave us. Many reconstructions have been made upon the authority of the accounts written immediately after the Pizzaro Conquest. Probably the best known, principally because it has a great age, depicts Peru as a highly organized, collectivistic state. This collectivism is regarded as the glory of the Incas and is sometimes considered a model for Utopia.

But it has been contended now for some time that this view is a myth, and more careful work and the advent of more critical

methods has led to the discarding of important parts of the traditional view. Dr. Trimborn has summarized the evidence available for a description of the economic life of the Inca Empire, and he agrees with the critics of the older statements. His essay includes a careful examination of the principal secondary works as well as the source materials, and he shows how many writers misread the facts because they brought with them too many, or false preconceptions.

In general, Dr. Trimborn follows the lead of H. Cunow[1] who declared over thirty years ago that the village-community was the basis of Peruvian economy, in the time of the Incas as well as earlier. He contends, as did Cunow, that the Incas did not create a semi-socialist state, and that their empire was a vast agglomeration of village communities.

The Incas, as is generally agreed, did not create the entire civilization found by the Spaniards, but built upon the pre-existing cultures of the region. In 1527, Inca land was 250 miles long and 60 miles wide. This large area had been conquered over a period of years, and the story of the conquest is in many points similar to that of the expansions of the Romans from the Tiber.

Dr. Trimborn gives the geographical and sociological setting for the culture of the Peruvians before going on to his main task, which is to discover the essential nature of their economy. He centers his attention on the economic functions of the village community, and gives a comprehensive account of property and the organization of production. The Peruvians were agriculturalists, who held land in common, which was regulated by the village group.

As Markham says, the Incas found the system of village communities and altered it to the requirements of an empire. This, Trimborn declares, they did by altering village custom in three ways: they segregated the Inca and cult lands; they created private property on royal fiefdom in some cases; and they divided the tribes into the hundreds, which served as the basis thereafter for the social organization of the villages.

Two-thirds of the land were taken by the conquerors: one-half of this amount went to the Incas or rulers; the other, to the maintenance of the priesthood and for the performance of devout ob-

[1] H. Cunow, "Die altperuanische Dorf-und Markgenossenschaft," in *Ausland*, vol. 63 (1890), and *Die soziale Verfassung des Inka-Reiches*, Stuttgart, 1896. Cf. V. A. Belaunde, *El Peru antiguo y los modernos sociologos*, Lima, 1908; and C. R. Markham, *The Incas of Peru*, pp. 170–172.

servances. The desmesne, or tribute lands, included part of the arable, pasture, and forest, and all the minerals. The Incas sometimes gave private property in some of their tribute lands to nobles, who held personal titles. As a result of the conquest, there were four social classes in the Peruvian empire: 1. The Incas, the ruling family of the Inca tribe. 2. The Orejones, the members of the Inca tribe. 3. The Curacas, the leading members of the subject tribes. 4. The Tributarios, the whole of the conquered peoples. Each of these classes had rights and duties.

The remainder of the land belonged to the village community, which divided it yearly according to the needs of the family working the land or the pasture. The people paid taxes to the central authority with their labor on the tribute lands.

The *Sippe*, which were united by ancestor cults, built a *Rechtsschutzverband* and a military community. The *ayllu* [the sib group, *die Sippe*] were settled in villages. Land was the collective property of the *Sippe*. The arable was divided among the villagers, and its production regulated. A part of the territory, the common, remained undivided, especially the forest and pasture. The labor and the products of this undivided land were communal, as were the herds. Private property in movables, as well as inheritance in them, existed.

The union of individuals in the village group is deemed to have been more important than the influence of the central authority.

The village group was practically autonomous. The amount of the tribute land was settled; to all other lands the village had unlimited claim. It ruled its production and distribution through village custom. The group was self-sufficing. Inter-local trade was limited to those few things which were specialized in other regions. All exchange was by barter.

In this community it was the duty of all to work. For the tribute lands there was collective labor, but usually individual labor otherwise.

Dr. Trimborn thus summarizes his conclusions:

The Incas created no socialistic *Grosszstaat*. The Inca-roads and granaries did not serve the needs of exchange throughout the state, but only deliveries of taxes in kind, for which the village community, like the Russian *mir*, was collectively responsible. The Incas did not promote inter-local trade. In the property relations of the villages they appear only as the recipients of the tribute lands, which were given to a small number of nobles. We can see economic activities of the Incas only in the laying of the great aqueducts, whose use was regulated by the villages, and in making possible increased production by colonists, in so far as these did not participate in military functions.

To call the Inca Empire a socialist state *par excellence* is to misunderstand the real nature of this conqueror-empire. The only way, indeed, mentioned by some authors in which the central Peruvian authority showed its social character is its support of famine-stricken provinces from the state granaries. This action, however, can be termed social only in its consequences, and not in its motives, because each such aid granted was a good outlay of capital, in the sense that a creditor must take an interest in the debtor's capacity to pay. Where the conquerors did nothing, as in the case of the sick and the aged, the support of these was left to the village.

We are well informed as to the taxes and compulsory labor imposed on the subject people. About the *Sozialpolitik* of the conquerors, however, we possess only vague reports, which do not give us a picture of the Peruvian economy as a collectivistic Utopia.

With unimportant exceptions the economy of the village communities was untouched by the central authority. The Incas did nothing to adjust the social differentiations, undertook no centralization of production or consumption. They left the economic life of the autonomous, self-sufficient village communities decentralized, as they found it.

Dr. Trimborn's general contention is undoubtedly correct, but there remains the problem: how far correct? Surely, he exaggerates the resemblances between the Peruvian village group and the German *Markgenossenschaft*. The Inca Empire lasted four hundred years. Its prosperity and existence must have been based on something more positive, something in addition to the acceptance by its rulers of the system of village economies which they conquered. This essay emphasizes forms, the patterns of activity, and gives us less on the condition the of the people. Furthermore, and perhaps primarily because of the state of our sources, it omits many important details concerning the operation of the economic mechanism it describes.

MAURICE GREER SMITH

Mythen en Sagen uit West-Indië. H. VAN CAPPELLE. XII, 416 pp., illustrated. Zutphen 1926

Under this title Dr. Van Cappelle has published an interesting collection of folk tales pertaining to the Indians and Negroes of the West Indies in the widest geographical sense of the term. Guyana, however, has furnished the greater part of these tales. The origin of this book lies far back. In 1900 the author, a geologist and naturalist, led an exploring expedition into the wilds of the Nickerie district, Surinam, on which he came in close contact with Indians and Negroes. Since that time Van Cappelle never lost sight of a

subject which greatly interested him, and as far as his professional duties allowed, he devoted much of his time in collecting folk-lore material both from bibliographical sources and from correspondents in the West Indies.

The contents of *Mythen en Sagen* are as follows: Preface; List of works consulted; I. Myths and legends of the West Indian Indians; II. West Indian Negro folk-lore; III. Supplements; IV. Glossary. The lesser half of the book contains Indian tales (Carib, Arawak, Warrau), the greater half Negro lore, not only from Surinam but also from some of the islands, *viz.* Curaçao, St. Eustatius and Jamaica. The Penard brothers and Walter E. Roth have furnished most of the Indian stories, while Van Cappelle also borrowed from Brett and Van Coll. An episode from Albert S. Gatschet's *A Migration legend of the Creek Indians*—the wanderings of the Kasihta—is also retold here. These Indian tales are, in a way, more varied than those of the Negroes in which latter the Spider (Anansi) is mostly the chief actor. He is the trickster *par excellence*.

In Van Cappelle's collection we find side by side an image of the psyche of two radically different races as reflected by their lore. Inhabiting the same country for centuries, mutual acculturation, at least evidenced by these tales, is as it seems, of little or no importance. In this respect both the Indian and the Negro have held their own. The influence of the whites on Indian lore, however, has been greater, as for instance, is clearly proved by nos. 29, 40–44. As we know, transformations of original tales, the world over, are not rare. A striking example of this has been furnished by Cushing, "The Cock and the Mouse," in his *Zuñi Folk Tales*.

Before the Indian stories are told, Van Cappelle summarizes their contents on pages 7–65, in connection with the mental characteristics, religious beliefs, customs, etc. of the Guyanese aborigines. The author's sympathy with them is evident. On the contrary his admiration for a part of what one is used to call civilization is of the very slightest. No wonder. It is a feeling shared by many a traveler in distant lands, among whom Van Cappelle quotes Alfred Russel Wallace (p. 13). As generally elsewhere in America, cosmogonies, hero myths, animal and plant lore are the principal subjects of these Guyana Indian tales. The childish gladness and humor, so common in African lore, is much less marked here. A mere mentioning of the names of the forty-seven Indian stories would convey but little to the reader. Suffice it to say that those genuine Indian—not hybrid—are all equally interesting for they have been carefully chosen.

The most important part of Van Cappelle's book is doubtless that on Surinam Negro lore, especially the thirty-six tales of which a list is given on pp. 235–236. They are, more than the Indian stories, due to the untiring personal effort of Van Cappelle and his fellow workers Mr. Van Drimmelen and Mr. Nahar, the latter an educated Javanese. The Negro tales are also preceded by brief summaries. Like the Negro proverbs of which (pages 237–246) twenty specimens are given by Van Cappelle in the original text with translation (pp. 380–381), these stories often teach an object lesson, or give a moral maxim, and, as in the Indian lore, they often explain in their own naive way certain characteristics of animals and natural phenomena. Influence of the whites in some tales, at least in the modern ones, modified by the American milieu, are very evident. Twenty-seven are Spider stories in the strictest sense. Their origin is truly African. We are told how Anansi conquers a village, how he pays his debts, the part he plays as a clergyman. These and the other stories are proof of Anansi's great cunning, incredible power of resistance and ravenous appetite. Those tales in which Mr. Spider plays no part give an insight in the belief about other animals and persons, real and mythical, like the boa, the monkey, the Watra-mama, and others. Space forbids even briefly to mention the contents of these amusing stories. They must be read. Their original purport and spirit is very well rendered into Dutch from the local jargons, Negro English, Negro Dutch and Papiamento, but an English translation would be desirable for the sake of comparison with the folk-lore of other American and African Negroes.

The Supplements contain Negro proverbs from Surinam and West Africa (Ewe and Yoruba) and two tales, one from Sierra Leone, and one from Gaboon. The Glossary of twenty pages explans a number of words, names of animals, local expressions etc. met in *Mythen en Sagen*. Moreover numerous footnotes facilitate the understanding of many tales. Both glossary and notes are proof of the scholarly way in which Dr. Van Cappelle has treated his subject. But this in no way impairs the literary merits of the book, for it is well written. For those who, like the reviewer, know by personal acquaintance, the primeval forests of Surinam and their dusky inhabitants a great charm emanates from these pages, invoking memories of days bygone.

The book contains twenty-four full-plate illustrations by Willem Backer, each one referring to a line in the text. They are very

artistic throughout. The mythical, the ghostly, which pervades many of these folk tales is well rendered; no easy task indeed. Although this young artist is evidently a poet, unfortunately some of his illustrations do not quite come up to the standard as to physical anthropological and ethnographical details.

Mythe en Sagen is dedicated to the author's friends, Mr. C. Van Drimmelen, "the sympathetic champion of the interests of the American Negro population," and the present reviewer.

H. TEN KATE

CARTHAGO,
TUNESIA.

Aboriginal rock shelters and other archeological notes of the Wyoming Valley and Vicinity. MAX SCHRABISCH.

The courageous manner in which the Wyoming Historical and Geological Society, of Wilkes-Barre, Penn., has undertaken its Indian survey of the state of Pennsylvania reflects great credit upon the determination of Miss Frances Dorrance, the Director, to locate map, survey and explore the archaeological stations of the state.

That the archaeological survey is seriously under way is indicated definitely in the publication of *Aboriginal Rock Shelters and other Archaeological Notes of the Wyoming Valley and Vicinity*, by Max Schrabisch. Mr. Schrabisch who conducted the rock shelter survey is eminently fitted for this work and has had much experience in New York and New Jersey. Indeed his surveys for the State Museum of New York and the New Jersey State Museum placed him at the head of all Eastern rock-shelter archaeologists.

The report of the survey, published as Vol. XIX of the Wyoming reports, embraces 186 pages and appears upon the excellent paper that has long been used by the Society. There are 26 maps and plates.

In outlining his field for a description in the report, Mr. Schrabisch writes,

> Little is known regarding the history of the several Indian tribes dwelling in and near the Wyoming valley prior to the advent of the white man. Having been the converging point of so many people, differing in culture and customs, one is here confronted with a veritable Gordian knot.

As the author goes on to describe his discoveries he enlarges on this culture complex, and shows that it is the result of the contact of two

great subdivisions of the Indian race,—the Iroquoian and the Algonkian. In turn each of these groups was further divided, both by time and cultural attainment. Since all the various groups and subdivisions of stocks and tribes influenced the region and used the same general areas for camps and village sites, the distribution of cultural artifacts is confused. Only an expert can make any approximation of the identity of certain classes of articles.

Mr. Schrabisch outlines the general characteristics of each group, and correctly interprets the great differences in pottery designs and forms. Pottery is a good index to the identity of a site.

The report describes the numerous rock shelters and shallow caves in the Wyoming region and summarizes the results of excavations. The explorer states that nothing of outstanding importance was discovered in the way of specimens, but the facts which he brings to light are a genuine contribution to archaeology. The cave layers or deposits which were opened were not stratified as in the case of Finch's rock shelter found by M. R. Harrington in Westchester Co., N. Y., and there was no evidence of colonial contact.

In his summary the explorer says:

> Pondering the evidence afforded by rock shelter remains, it can hardly be doubted that they are to be referred to what is called Middle Algonkian, comparable to the culture complex of New Jersey, with its crude pottery forms and stamped decorations, though frequently betraying, as just stated, the cultural impetus received through close contact with the Six Nations, their masters. As for other industrial types, dug up under rock shelters, such as objects of stone, they are unquestionably to be correlated with Algonkin culture . . . . . None of the ten rock stations discussed; . . . . afforded any proof of Archaic Algonkin occupation.

The value of the rock shelter survey and the report issued covering the activities of the Society in this direction, is considerable. To the mind of the reviewer it shows that the early Algonkian people did not early enter the mountainous regions of Pennsylvania or use rock shelters until at the close of the second Algonkian period, and even then left but slight traces compared with the evidences left by the Iroquoian peoples, who came at a much later date. There is nothing here comparable with the "cave dwellers" of Europe.

The survey shows, also, that the Wyoming valley was a place of passage rather than a homeland. Numerous tribes of at least three stocks traversed it and left their scattered remains. It is only when the Iroquoian people, as the Andaste, Onondaga, Cayuga and Seneca

Iroquois came upon the scene that culture traces become positive and abundant. Indeed, the Iroquois used the Wyoming valley as an area in which to herd their southern vassals, and educate them in the folkways of their famous confederacy. It was here that Shikellamy was viceroy for the Six Nations council.

The report is well written, and Mr. Schrabish has an easy style that makes a perusal of the work a pleasure. The Wyoming Historical and Geological Society is to be congratulated upon this auspicious beginning of their wider survey of the 1,900 sites charted for study and examination.

ARTHUR C. PARKER

OCEANIA AND INDONESIA

The Southern New Hebrides, an Ethnological Record. C. B. HUMPHREYS. Cambridge: University Press. 1926. Pages XVI, 214. (Price 12s. 6d. net.)

This book represents the first attempt to describe in English the ethnological conditions of the five southern islands of the New Hebrides. There are no illustrations in the volume, but there are references to Speiser's plates. Mr. Humphreys' book is a model work so far as range of topics is concerned. He even presents anthropometric data, not only averages, but, what is more valuable, the individual measurements. These are confined, however, to males. For some unstated reason he appears not to have measured females.

The native culture had suffered considerable alteration at the time of Mr. Humphreys' visit, which seems to have been within the last decade, although he does not give the date. He calls attention to features present in Captain Cook's time but lacking now. He calls attention also to features observed by him which contradict the accounts of observers within the last thirty or thirty-five years. It is not always clear if these discrepancies are due to faulty observation or to actual changes in culture. If the latter is the explanation, and the white man is not responsible, then it would appear that we have a most interesting phenomenon which should yield data as to the rate of change in primitive culture.

The concise, clear presentation of facts which constitutes the body of the book is followed by a concluding chapter of hypothesis, in which the time-honored migrations of certain writers on Oceania hold sway. Upon a substratum of pygmies, who scarcely penetrated

into Melanesia, spread the Oceanic Ulotrichi who formed the aboriginal population of Melanesia. Then followed a great wave of pre-Dravidian peoples, who did not enter Melanesia but passed into Australia. Next came the Austronesian-speaking peoples who

> spread into Indonesia and Melanesia in large numbers and reached Polynesia where they formed the aboriginal population in many islands. As they interred their dead in the sitting position they have been called the Sitting-Interment people, and it was they who, by fusion with the Ulotrichi, formed the dual people leading to the dual organization of society and its important results in Oceanic culture. These Austronesian-speaking people are also credited with having introduced many new cultural units such as a belief in spirits, the practice of magical rites, circumcision and the outrigger canoe. Descent was through the mother, with the result that, when the dual organization of society became firmly established, matrilineal descent combined with exogamy remained an important element in this culture complex.
>
> The fourth movement of peoples may be divided into two classes, those who used kava and those who used betel. The kava folk are assumed to have brought with them, among other things, patrilineal descent, secret societies, extended interment, preservation of the body, and megalithic monuments, as well as cremation. The betel folk never got beyond Santa Cruz and it is unnecessary to give them any consideration here.

As will be plainly seen, this hypothesis involves the naïve assumption that the cultural features spread only as the people migrated, that the custom of betel-chewing, for example, did not extend beyond the region to which betel-chewers migrated.

How completely the author is under the sway of the hypothesis of different migrations, "according to the present belief of ethnologists," is exemplified by the following: He regards "interment on the back in the earth, with or without the knees flexed" as

> the form of disposal introduced by the kava folk, [which] for some reason or other, superseded entirely the sitting interment of the dual people, which is commonly supposed to be an important element in the earlier culture complex. The most plausible explanation is that the kava folk introduced a practice so revolutionary in its influence that important elements of culture, such as disposal of the dead, became completely changed to the form practised by the new-comers; also that the dual organization of society itself, with its descent through the mother, began to change to the new order of patrilineal descent.

These traits of disposal of the dead, dual organization, and matrilineal descent are features for which the author has no evidence of former existence in the Southern New Hebrides. Yet he takes the

hypothetical mold of culture succession in Melanesia and proceeds to cram the culture of the Southern New Hebrides into it, regardless of the fact that it does not fit. He attempts to explain the little known by the unknown.

What is sadly needed in Oceania are not more shaky hypotheses based on the study of living peoples or further attempts to make the facts fit the present hypotheses, but some careful archaeological field work. The spade alone can settle whether sitting interment was ever practiced in the Southern New Hebrides. The presence or absence of other material traits can likewise be settled with a fair degree of certainty, though to be sure the spade can never settle for us the presence or absence of dual organization.

E. W. GIFFORD

Mono-Alu Folklore (Bougainville Strait, Western Solomon Islands). GERALD CAMDEN WHEELER, B. A. (Lond.). London: George Routledge & Sons, Ltd. 1926. Octavo, pp. xv, 396. (Price, 21s.)

Mono-Alu Folklore is a model work of its kind. It is arranged to give the reader speedy access to any point which he desires to consult, for the author has prepared a very useful index to motives. In addition there are indexes to the flora, to the fauna, and to place names. Following the introduction are summaries of tales, introduced by a classification of tales into eleven groups: **A**. Origin of Natural Objects. Origins, Wanderings, and Changes of Culture Elements. Chiefship. **B**. Taro. **C**. Women not of Human Origin. **D**. Animals. Higher Animal Beings. **E**. Snakes, etc. **F**. Sexualia. **G**. Cannibalism. **H**. Journeys to Ogres. **K**. Journeys outside the World of Men. **L**. Supernatural Beings. **M**. Actual Happenings.

Part 2 of the book presents the Mono texts, English translations, tales with no Mono texts, and extensive notes. If the Mono and English were presented interlinearally or on alternate pages study would be facilitated. Part 3 comprises a Mono-English glossary and the indexes mentioned above. The Mono texts, with the translations, notes, and glossary, form a valuable contribution to Melanesian linguistics. The publishers and author are to be commended for the high standard which the book sets.

E. W. GIFFORD

American Samoa: Part I. Vegetation of Tutuila Island. Part II. Ethnobotany of the Samoans. Part III. Vegetation of Rose Atoll. WILLIAM ALBERT SETCHELL. Department of Marine Biology of the Carnegie Institution of Washington, volume XX (Carnegie Institution of Washington Publication No. 341). June, 1924. VI, 275 pp.; 37 pls.

Part II of Professor Setchell's book is of direct interest to anthropologists. It summarizes the Samoan's relations to his plant world, records the author's observations, and assembles the references to similar data in the literature. Part I lists the plant species of Tutuila. The remarks about each species embody the author's notes as to its use or non-use by the aborigines.

E. W. GIFFORD

A Comparative Study of the Melanesian Island Languages. SIDNEY HERBERT RAY. Cambridge; The University Press, 1926. Pp. 598, 6 maps.

This work relates to the central Melanesian Islands. Fiji, New Caledonia, New Ireland, New Britain, the Admiralties, the New Guinea coast are not included. The bulk of the book consists of brief grammars or comparative analyses of about fifty idioms in the Loyalty, New Hebrides, Banks, Torres, Santa Cruz, and Solomon groups. There are seventy-five pages of excellent introduction,—historical and comparative; and three of conclusion. Only truly Melanesian, that is, non-Papuan, languages are included. Comparative vocabularies are omitted, except for a brief list. Many full vocabularies seem to be in the author's hands; their publication would be extremely desirable.

Mr. Ray's competence in this field is well known. He follows in the foot-steps of Hervas, Marsden, Humboldt, Latham, Gabelentz, and, among moderns, of Codrington, Kern, and Brandstetter, and rejects the theories of Macdonald and Churchill. He finds the Indonesian element to vary greatly in strength in Melanesia, without reference to proximity to the East Indies; it is most prominent in small islands. These were evidently settled by colonists from the west, who influenced to a less degree the speech of the larger Melanesian islands that came within their influence. The Indonesian element in Melanesian has the characteristics of a pidgin-tongue or jargon; it can generally not be referred to any particular Indonesian

language. Complete vocabularies would show that Indonesian words form only a small proportion of the word-store of any one Melanesian idiom. The preponderant non-Indonesian words however cannot be shown to have community of origin in the various Melanesian languages. The inference is that the Melanesian languages were originally of variant stocks and that their apparent uniformity was brought about by the assimilation of an imported Indonesian element.

The last three conclusions are not supported by evidence given in the book. They may be largely or wholly correct; but would presumably be difficult to prove in the present state of deficient knowledge and imperfect analysis. The author cites a number of outstanding features of Indonesian grammar occurring in each Melanesian area, such as pronominal affixes, prepositions, and articles; to a considerable extent it is not only the concepts but the Indonesian forms that recur. Such elements are thought generally not to be borrowed by unrelated languages. There would therefore be some presumption, by ordinary philological standards, that the Indonesian or Malayo-Polynesian element was more basic in Melanesian than the author sees it. If it is not, and he is correct, he has furnished concrete evidence on a point of fundamental and general interest hitherto disputed, namely of the ability of languages to diffuse forms and formal elements, as well as content, on a significant scale.

A. L. KROEBER

De Rassen van den Indischen Archipel. J. P. KLEIWEG DE ZWAAN. Met 76 Afbeeldingen naar Photographieën. Amsterdam, 1925.

This compact little volume of Dr. De Zwaan's contains seventy six plates illustrating the racial types of the East Indies and sufficient text to summarize the views held by leading anthropologists regarding racial distribution in Oceania. The races are dealt with in the order of their probable entrance into the island region from the Asiatic mainland: the Negrito, the Veddoid type, the Proto-Malay and the Malay.

The salient physical characteristics of the Negrito are given as: short stature, woolly hair, dark skin, black-brown eyes, and short skull. Zwaan is of the belief that short stature alone is no criterion of the pygmy race. This judgment would of course hold true where it is merely the individual who falls below the 150 cm. mark. But the

author also points out that there are non-Negroid races whose average is barely above the mark, that of the Lapp, e. g., being, perhaps, 152 cm. The case in dispute, however, is that of the dwarf tribes of New Guinęa. The Tapiro, for example, vary from 132 to 152 cm. and the average height of twenty individuals was given as 144 cm. Zwaan does not believe it to be a settled question that the Tapiro are "pygmies," and he thereby differs in judgment from Haddon.[1]

The second race to migrate, the Veddoid type, is described as having: long arms and legs, brown to dark brown skin color, and dark brown eyes. The hair is *wavy*, dark and thick. The beard growth is thin, dark and wavy. There is little body hair. The head is very long, and the eyebrows protrude. The face is broad and not very long. The root of the nose is sunken deep in the face, and the chin pointed. The nose is very flat, with broad nostrils. The lips are thin to thick. The skull is orthognathous with a very small capacity. A Veddoid type of people was once widespread over the Indies, and individuals of the type are to be found among the races which came at a later period to the islands. The Toala, first described by the Sarasin cousins, are the most typical survivors as a group in the islands. Individuals of the Veddoid type, though not groups, are to be found in the Philippines.

The third race to come to the Indies was the Proto-Malay, of whom the Battak of Sumatra are given as the purest specimens. The Proto-Malay are to be differentiated from the Coast Malay, such as the Javanese, by a shorter body, longer head, darker skin, broader and more concave nose, and a broader mouth.

The question has again been brought up of late as to whether the Deutero, or Coast Malays, are a different race from the Proto or Inland Malays. While De Zwaan does not give positive answer to this question, in his opinion the calling of the Proto-Malays by the name of "Indonesians" has given rise to the greatest confusion in anthropology. In remedy, De Zwaan advises the entire dropping of the term "Indonesian" in physical anthropology, and the use of some substitute, such as Old Malay, Pre- or Proto-Malay.

I find myself in full agreement with De Zwaan on this point. In the first place, authors do not agree as to the physical characteristics of the Indonesians. Thus, Sullivan, in describing the Indonesian

[1] A. C. Haddon, The Races of Man, 18, 1925.

element in Polynesia, attributes a short head to the Indonesian,[2] while Haddon has classified the Indonesians under Cymotrichi, or wavy-haired peoples![3] Secondly, the question arises as to the validity of a strict racial distinction between the "Indonesians" and the Malays. Kroeber, in his handbook, *The Peoples of the Philippines*, argued for the separate migrations of three races to the Philippines: the Negrito, the Indonesians, and the Malays. On the other hand, Hagen, Deniker, and more recently Heine-Geldern[4] believe that the Indonesians are the true "Malay," and that the Deutero-Malays developed from the Proto-Malays in the form of a mongrel people, containing Chinese, Hindu, Arabic, and other admixture. Heine-Geldern points out that the settling of the coast provinces in the Indies by the cultured and racially mixed Malay occurred in late prehistoric and historic times, and is still in progress. With the exception of the Moro, this is less true of the Philippines, and Kroeber had more justification for a rigid race distinction in the Philippines than if he had treated the East Indies as a whole. Finally, the term "Indonesian" is of general acceptance as a label for the Malayan languages, and it leads to confusion when the same term is applied to a subdivision of the Malay race.

E. M. Loeb

ASIA

Kopfjagd und Menschenopfer in Assam und Birma und ihre Ausstrahlungen nach Vorderindien. Robert Freiherr v. Heine-Geldern. (Mitteilungen der Anthropologischen Gesellschaft in Wien, 47: 1–65, 1917.)

Mutterrecht und Kopfjagd im westlichen Hinterindien. Dr. Robert Heine-Geldern. (Mitteilungen der Anthropologischen Gesellschaft in Wien. 51: 105–140, map, 1921.)

Dr. Heine-Geldern, in his first paper, points out that the Wa, a Dravidian race, of Siam and the British and Chinese Shan States, still practice head-hunting. The large group of Chin, Kuki, and Lushei of Burma were formerly head-hunters, as were the Naga of

[2] L. R. Sullivan, Race Types in Polynesia, this Journal, 24, 1924.

[3] Haddon. l. c., 23.

[4] R. Heine-Geldern, *in* Buschan, Illustrierte Völkerkunde, Stuttgart, 1923, 2: 698.

Assam. The Garo of Bengal furnished the known western limit to this practice. According to the theories advanced by the author, the various forms of human sacrifice which formerly existed in India itself were not brought into the country by the Aryans, but were developed from Dravidian head-hunting practices, these being widely disseminated at that time. The character of the Hindu human sacrifices is discussed, and the importance laid to the preservation of the head is emphasized in every case.

Of equal interest is the theory advanced by Dr. Heine-Geldern, that the head-hunting practices of Indonesia are likewise diffused from the Dravidian tribes of the mainland. This appears plausible because of the following reasons given for head-hunting; the acquisition of wealth, the bettering of crops, the use of the ghosts of the decapitated as servants, and the test of manhood. These reasons appear in head-hunting areas both on the mainland and in the island region. In method, Dr. Heine-Geldern is willing to assume the past occurrence of traits from present day "survivals," even where historical proof is lacking. I am not in agreement with this use of "survivals." For example, it seems that the use of animal skulls as decorations is more widespread than the use of human skulls, although the two customs are often concomitant. The use of animal skulls, therefore, should not be taken as a criterion of former head-hunting in the manner suggested in the present paper. Thus, the Pagan tribes of the Malay Peninsula used animal skulls, but were never head-hunters, and the same is true of the Southern Mentawei Islanders. In the latter case, I am of the opinion that the custom was diffused from the head-hunting people of Nias.

In his second paper Dr. Heine-Geldern finds that the Garo of Bengal are the only people of Farther India who, in former times, certainly had head-hunting, and who now have complete matrilinial social organization as well. There is, therefore, no reason for the unbiased ethnographer to assume that "mother-right and head-hunting" had a common origin in this region.

E. M. Loeb

Santal Folk Tales. Edited by P. O. Bodding. Preface by Sten Konow. Institutet for Sammenlignende Kulturforskning. Oslo, 1925.

The Kolarian tribes of India, of which the Santal are the most important one, are the last remnants of a race which in ancient times

seems to have played a considerable rôle in India and in the countries and islands around the Indian Ocean. The present volume of texts, therefore, should be of great importance in preserving a record of a Kolarian language. This is the more true, since, according to Kunow, Kolarian words and ideas, along with Dravidian, have formed a substratum in the languages and civilization of Aryan India. Conversely, the Aryan language and civilization have permeated the Kolarian cultures. Among the Santal we have a linguistic situation somewhat analogous to the Malay: old concrete words going back to the aboriginal people, while many abstract terms, and most terms of newer articles of a higher culture, are of foreign origin.

The very fact that it is difficult to differentiate the *bona fide* Santal from the introduced Aryan makes the task of the ethnographer somewhat difficult. Thus, the Jackal, as treated in the present volume, has a dual character somewhat analogous to Coyote of American Indian folk-lore. Sometimes Jackal is a clever and dextrous animal, always prepared to assist those who have suffered wrong. In other stories, however, he is depictured as malicious and treacherous, but is usually defeated in the end. Now the Jackal also enters into Aryan folk-lore, and Kunow suggests that it is possible that all Jackal stories are taken from the Kolarian. On the other hand, it is equally possible that the dual character of Jackal is due to the mingling of Aryan and Kolarian concepts. In American Indian mythology the dual character of Coyote can be dealt with as an indigenous phenomenon; among the Santal this cannot be done with any degree of certainty.

In like manner the Santal marriage customs are of considerable ethnographic interest. Starting from a strong patriarchal system of marriage, with wife purchase and wife ownership, a more recent system develops, with matrilocal residence and the adoption of the husband by the father of the bride. Among the Santal this variety of matrilocal residence can be of a temporary nature, which lasts for five years. During this period of time the husband works off his bride price. The matrilocal residence can also be of a permanent character. In the latter case, the father of the bride pays all the expenses of the marriage, and by adopting his son-in-law, assures himself of an heir to his property. This custom is apt to take place where there are only daughters in the family, for among the Santal, women cannot inherit.

The marriage system, as developed by the Santal, is closely analogous to the two forms of marriage reported by Marsden for the

Rejang of the Southwest coast of Sumatra. There the purchase form of marriage was called *jujur*, while the adoption of the husband was *ambel anak*.[1] The question arises, as to whether the original form of marriage among the Santal was as strongly patriarchal as it sometimes is at the present day. Bodding believes that Santal marriage forms owe much to Aryan influence. Here again, then, the interpreter of the culture is left without final solution.

Mr. Bodding has been the first to record Santal folk-lore. He may be the last. In preparing the present volume, which is replete with footnotes giving important cultural explanation, he has presented an original document, which may later be expanded, but cannot well be superseded.

E. M. Loeb

PRIMITIVE MUSIC

Etude sur quelques manifestations musicales observeés en Haute-Guinée Française. Ch. Joyeux. (Revue d'Ethnographie. Paris, 1924.)

We have in this memoir an account of the music of the Malinké in Upper French Guinea. In the study of the phonographic records the author has had the assistance of Mme. Béclard d'Harcourt whose valuable work among the races of South America has been reviewed elsewhere in this journal. Her comments, which appear in italics throughout the memoir, are characterized by clearness of observation and breadth of information.

A catalogue of the various musical instruments is given with the tuning appropriate to each. The Bala, or xylophone, seems to be highly perfected in this region and occurs in many forms throughout Africa. The tones of one instrument as noted seem to give an accurate G minor scale. The trumpets, made of horn, ivory or wood produce but one tone and seem to be of very little interest to the student of music or of ethnology. The flute appears not to have been standardized as there are flutes with two, three or four holes. They are blown by a hole in the side and not in the end, as is the practice among certain races in the New World. Of stringed instruments there seem to be several varieties, some to be plucked and some to be bowed. Instruments of percussion are also used in many different forms.

[1] *Jujur* is the usual Malay word for the money paid by the bridegroom to the parents of the bride. If we convert *ambel anak* to *ambil anak*, it would mean, in present day Malay, "taking and retaining children."

As to the vocal characteristics of this people Mme. d'Harcourt notes:

les voix crient plutôt qu'elles ne chantent; les intervalles ne sont pas constants, ainsi qu'on peut s'en rendre compte a l'audition de nombreuses reprises du même motif, et semblent, dans beaucoup de cas, indifférents; aussi les notations des chants sont-elles souvent épineuses et parfois impossibles. Mais, cette réserve faite sur la justesse, je suis convaincue que les chants ou airs d'instruments emploient les intervalles auxquels nous sommes habitués, et aucun n'est plus petit que le demi-ton.

The songs themselves, sung at the various festivals or in honor of persons from whom gifts may be expected, are solos or choruses with orchestral accompaniment. The notion of harmony, however, does not seem to be very highly developed as would appear from Mme. d'Harcourt's remark on one song:

. . . . le bala frappe un si bémol tandis que le chanteur donne un si double bémol ce qui est assez cruel pour l'oreille.

The songs as transcribed are for the most part monotonous and uninteresting for the musician. One or two of them, numbers 7 and 14 for instance, would repay study.

DERRICK NORMAN LEHMER

Songs of the Copper Eskimos. HELEN ROBERTS and D. JENNESS. (Report of the Canadian Arctic Expedition 1913–18. Ottawa, printed by F. C. Acland, 1925.)

The songs discussed in this report were collected near Bernard harbor in Dolphin and Union strait in the territory of the Copper Eskimos. A few of the songs are from points farther west and a few from the Hudson Bay region.

The Copper Eskimos were not acquainted with a phonograph prior to this time; there were still a few natives, in fact, who had never seen a white man. They thought a spirit was reproducing their words, and were quite nervous at first about singing into the machine; later when more familiar with it, one or two of them were inclined to play pranks, ejaculating, laughing or talking in the middle of a song to create more amusement when the record was played over. The texts of the songs are full of this extraneous matter.

By far the greater number of the songs in this collection are dance-songs and weather incantations.

There are no labor songs; apparently there are no love songs.

The dance songs are used for lullabies. There appear to be two types: *pisiks* and *atons*, the essential difference being not so much in the music or the words, as in the manner of dancing. The performer of the *pisik* wields the drum himself, the rest of the people accompanying him in the singing. In the *aton* the drum is either not used at all, or else is played by one of the singers in the circle. After the *aton* is well started the performer generally ceases to sing and begins to gesticulate violently with his arms hopping from one foot to the other whooping with delight and delivering himself over to the wildest abandon. A clear idea of the action in an *aton* is gained from the words of one of the songs:

My arms they wave high in the air.
My hands they flutter behind my back
They wave above my head like the wings of a bird.
Let me move my feet, let me dance.
Let me shrug my shoulders.
Let me shake my body.
My arms, let me fold them, let me crouch down.
Let me hold my hands under my chin.

The mere transcription of the songs is a task to daunt any but the most patient and indefatigable worker. Miss Roberts has not only carried out this nerve-wrecking undertaking, but has added to each song an analysis of its general make-up from the point of view of tonality and arrangement of phrases. Much of this work seems of somewhat doubtful value because it would appear possible to assign any one of several different signatures to most of the songs, and the frequent changes from one kind of measure to another (in No. 52 for example, there are some twenty such changes) makes one question the value of dividing the songs into measures in the orthodox white man's way. It is certainly easier to reproduce the songs if they are noted phrase by phrase, as has been done by R. and M. d'Harcourt in their monumental work on the music of the Incas. But the important thing is, of course, that we have the records in permanent form, and science and also the art of music will owe much to the patience and industry of the transcriber in whatever form the results are cast.

As to the songs themselves, they seem to the outside observer to have for the most part little musical value. They wander on and on with little or no variation in pitch or rhythm. Now and then, as in the "Longspur's Incantation" (No. 102), one gets a sudden

modulation of the harmony that is astonishingly effective. Some of the simple weather incantations like No. 90, for instance, have a wistful plaintiveness that is most appealing. One song, (No. 125) said to be a Russian song is a masterpiece of syncopation and kaleidoscopic modulations. It is fair to state, however, that the person most familiar with these songs, the transcriber herself, has a very high opinion of their musical value.

We find plenty of single songs here and there in Indian music that are beautiful, along with many that are not, but from the country where it is nearly always winter is brought a collection of songs that for their generally high musical merit, for real loveliness, it is hard to find a counterpart in more favored lands.

DERRICK NORMAN LEHMER

Ancient Hawaiian Music. HELEN H. ROBERTS. (Bulletin 29 of the Bernice P. Bishop Museum, Honolulu, Hawaii, 1926.)

The songs studied in this Bulletin were obtained in Kauai on the west, Oahu in the center, and Hawaii to the east. The collection may be considered as representative of all the islands, and the collector is certain that the possible failure to collect many local specimens from unvisited islands, while regrettable, is not vital to the survey as a whole. In all about two hundred tunes were taken of which some hundred and fifty are reproduced in musical notation. Sixty phonograph records have been set aside for preservation.

This bulletin provides a very valuable addition to our knowledge of primitive music. The careful analysis of the songs is a monument to the patience and industry of the author, who has not only given us a very complete and accurate account of Hawaiian music and musical instruments, but has also tried to indicate correspondences with the art of other peoples.

The music of these islanders as given in this bulletin impresses the reader as being extraordinarily monotonous. Even the music of the Eskimo, which it resembles in many respects, is more tuneful. It seems, as Miss Roberts observes, to be constructed to lie downward from the prevailing level and not to be built upward from it. This is an interesting basis of classification and might be used to advantage in the study of the music of American Indians. It is used by the author in trying to trace Hawaiian music to its source. The same object is attempted in the study of the various types of instruments.

A very interesting chapter is given over to the geographical distribution of music and instruments like the Hawaiian.

The author also touches on a particularly interesting point in discussing the possibility of the actual existence of part-singing among the natives before the advent of the white man. While there may have been, and probably was a kind of singing which was non-unison

> The manner of harmonizing observable today in much of the native singing shows that the ideas of consonance and dissonance that we have never existed among the Hawaiians.

DERRICK NORMAN LEHMER

AFRICA

The Peoples of Southern Nigeria (I: Historical Notes, XII, 365 pp. 5 maps. II; III: Ethnology, XX, 976 pp., 18 maps, 251 ills. IV: Linguistics and Statistics, 234 pp.). P. AMAURY TALBOT, Resident. New York: Oxford University Press, American Branch, 1926. ($23.50.)

In 1921 Mr. Talbot, who had already made ethnography his debtor by a fascinating volume on the Ekoi (*In the Shadow of the Bush*, 1912) was requested to conduct a census of his wards and to sketch their ethnography. The result is embodied in this gigantic report. The population dealt with is set at well over eight millions and embraces a vast number of tribes, classified under the three main heads of Sudanese, Semi-Bantu, and Bantu. Except for the Bali and their neighbors of the extreme northeast, the Sudanese occupy the western and central regions of the province. They include such famous tribes as the Yoruba, the Bini of Benin, and the Ibo. In his two ethnographic volumes the author has organized his material under such captions as Religion, Magic, Marriage, Social Organization, Occupations and Industries. In each of these sections a general survey is followed by tribal sketches, the order followed being geographical, from west to east.

An omnivorous reader, Mr. Talbot cannot always restrain himself from introducing references of questionable relevance, but this occasionally disturbing element is a veritable peccadillo in view of the vast amount of excellent descriptive material here brought together. Only a few of the many interesting data can be selected for mention here.

In consonance with Father Schmidt's views (of which the author, however, does not seem to be cognizant), the observation is recorded that

> the more primitive the tribe, the more nearly in many respects is it allied to monotheism (p. 15).

The male Sky god usually assumes the place of supremacy, with an Earth goddess as his spouse. Symbolic representation is common, and in view of popular conceptions of "fetichism" the following remark merits quotation:

> No case is known to me in which the representation has been ill-treated by disappointed votaries (p. 20).
>
> True fetichism, in which the object of worship is not symbolic but is worshipped for itself . . . . is absent from this country. Much of the ritual is aniconic. (p. 20 f.)

Most of the lesser deities are benevolent or neutral, though deliberate transgression of their laws leads to punishment (p. 80 f.). Medicine-men are often more powerful than chiefs, though in some cases the latter must share some of the "doctors' " knowledge, particularly in connection with the crops and rainfall (p. 155 f.). Ancestral spirits are believed to exert a great and constant influence on human affairs and in many tribes

> no action of importance is taken without first seeking the advice and commands of the ancestors (p. 300).

They are likewise intimately connected with the cult of the secret organizations (p. 311).

As for social organization, there is a noticeable rarity of exogamous clans in the area, marriage being mainly regulated by kinship only (p. 255, 538). Residence is practically always patrilocal, the children belong to the father, and altogether the male side is weighted (pp. 427, 539). While bride-purchase is general, the frequency of exchange is noted among the Ibo (p. 440). Levirate and sororate are both common (p. 430).

Government varied considerably within the area. While the Bantu of Southern Nigeria were democratic in the sense that the main power was held by a council of elders, Benin represented a typical African autocracy, while among the Yoruba the secret societies were dominant (562–608). These and related associations had a number of distinct, though sometimes blended functions. For instance, the Oro

of the Yoruba, apart from its political aspects, featured the impersonation of a recently deceased member (p. 758). The Ibo had a series of clubs exacting heavy initiation fees with proportionate prestige in the community.

> Admission to one of these orders bestows a position in the town which varies with the value of the particular "title," but those who have entered the highest grade form the governing body. It is therefore often impossible to distinguish between a man in his capacity as chief and as the member of a society (p. 771).

This is strongly reminiscent of the situation discovered among the Melanesians of the Banks Islands.

Age-classes (pp. 543–561) play a large part in native life, each having allotted to it some specific duty, such as policing towns or looking after the roads. Mr. Talbot gives interesting instances of the transformation of true age-classes into associations of another order, as when some Ibo groups allow purchase of senior status (p. 549).

Material culture is by no means slighted and is illustrated by many plates and text figures. To cite only a few details of comparative interest, the houses are almost uniformly rectangular (p. 880); farming devolves largely, but not entirely, on the women, yams forming the chief product of native horticulture (p. 904 f., 908); milk is unknown except in the northeast (p. 908); weaving is done partly by men, partly by women (p. 939); pottery is practiced by women, the vessels being

> usually built up by the addition of successive small pieces or strips of clay (933).

The only phase of culture that is all but neglected is folk-literature which is briefly characterized (p. 957 sq.) but not illustrated by actual texts.

For comparative purposes the numerous tabular summaries and distribution maps are of the greatest value. Altogether the author must be congratulated on his new contribution to ethnographic literature.

ROBERT H. LOWIE

Jakt-och Fångstmetoder bland Afrikanska Folk. (With a Retrospect in English.) GERHARD LINDBLOM. Etnografiska Riksmuseet, Stockholm, 1925. In 2 parts.

In the first volume, Lindblom illustrates the striking conformity between Northeast and South Africa as regards several peculiar

methods of hunting. These methods include the use of ostrich disguise, the poisoning of watering-places, and the catching of crocodiles with hooks. From these, and other methods of the hunt common to both areas, Lindblom forms the opinion that there was an ancient historical connection between the two localities. West Africa, as usual, stands off as a separate cultural area, and none of the special methods of hunting and implements found by Lindblom in Northeast and South Africa occur in the west.

The second volume deals with special methods of hunting in Africa. Two points of special interest are brought up. The first is the use by the negro races of Africa, and by these only, of a basketwork rat-trap somewhat like a bow-net. A peculiar variant of the bow-netted rat-trap is one that is edged around the mouth with thorns or points. Lindblom states that thorn-lined traps are found among the Naga, in Birmah, the Malacca Peninsula, Indonesia, etc. It will be of interest if the same form of rat-trap is also found in Madagascar.

A method of hunting by driving wild animals into an enclosure is known to have been practiced by the Lapps and people in general of the Arctic regions. It was found in Europe as well as in primitive North America, where it has been specifically mentioned for the Plains tribes and the tribes of California. In Africa, however, the method is only used by the Bushmen. It would seem more conservative, at the present, to regard this method of the Bushmen as an independent invention, rather than strive to find a historical setting for the trait outside of Africa.

E. M. Loeb

DISCUSSION AND CORRESPONDENCE

Notes on Jemez Ethnography

Dr. Elsie Clews Parsons' *The Pueblo of Jemez* (Papers of Southwestern Expedition Number 3, published for the Department of Archaeology of Phillips Academy, Andover, Mass., by the Yale University Press) is a beautifully printed and illustrated report and also well executed. In the review of this book in *El Palacio*, April 5th, 1926, the reviewer states:

> Miss Parsons, in her description of ceremonies, masks, kiva paintings and symbols, also bears out Reagan's descriptions and observations on "Jamez" as published in *El Palacio* (and *The Transactions of the Kansas Academy of Science*) and in even greater detail in his *Don Diego*.

I note that Dr. Parsons seems to think that no white man has visited the kivas of Jemez in recent years. I beg to state that I visited them often when I was the Government official there. I even attended many of the "preparation" ceremonies in the kivas, preparatory to the public ceremonies and dances in the plaza, and especially the "preparation" ceremonies for the Corn Dance in the summer of 1900. By special invitation I also spent the last day I was at Jemez in the kiva attending the annual election of officers for the ensuing year, an account of which is here appended.

At about three o'clock in the morning of December 29, 1900, Victoriana Gachupine, the Indian who chored for me, woke me and said: "They have built the fires to the gods." I went to the house roof and saw a huge fire burning just without the pueblo in each of the cardinal directions, one to each of their deities. The one to the south represented the sun, the one to the north the moon, the one to the east the morning star, the one to the west the evening star.

"To-day is Election Day," broke in Mr. Gachupine as he joined me in the housetop. "Last night," he continued, "the cacique and chief religious men, and medicine men met and cast corn (cast lots) to see who would be a suitable man for governor (this is the Jemez mode of nominating a candidate). To-day we will vote for the governor and the other officers."

At that instant the heavy, guttural, basic command of the governor and his aids, who had just entered the plaza on their com-

manding tour broke the stillness of the early morning with (translated): "Go to the south estufa (kiva) to vote for governor to-day." This they repeated time after time as they made the circuit of the entire village, after which they visited my residence in a body and specially invited me to attend.

After this commanding tour was completed, nothing further of interest was noticeable till about ten o'clock in the forenoon, except that guards were put out on every side of the village to prevent any of the male Indians above twenty years of age from leaving the place. At ten o'clock the governor and his aids again appeared in the public square, and, as they walked around and around the streets of the village, they gave the command (translated): "Go to the election." This order was not obeyed. The Jemez never care to attend an election. If there, they stand a chance of being elected to some office; and if elected, they must serve, whether they want to or not.

At noon the governor and his aids again appeared and, in gruff coarse, emphatic, voices, gave the following and last command of the day (translated): "We command you (in the name of) all the gods of our fathers, go to the election." This order likewise was not obeyed. So the Indian constables were compelled to force attendance; some of the Indians were dragged from their dark rooms and carried, struggling, to the estufa (kiva).

When all were within the secret religious hall, the cacique, standing with his back against the posts which separate the north wall of that edifice into the two rainbow sections—the section of the Rainbow in the West and that of the Rainbow in the East, lifted his hands to heaven and out toward the symbolic paintings of the house as he prayed long and earnestly to his deities.

After his prayer was completed, the retiring governor, Augustine Pecos, gave his farewell address in the form of a prayer, as follows (translated):

> O Sun, O Moon, O Evening Star, O Morning Star, O Montezuma (Pest-ya-sode), etc., O all the gods of our fathers, we indeed and in truth thank you for all things. We thank you for the infants, we thank you for the young women, we thank you for the young men, we thank you for the middle-aged and old women, we thank you for the old men, we thank you for the horses, we thank you for the mules, we thank you for the cattle, we thank you for the corn, we thank you for the wheat, ... we thank you for our kind neighbors, we indeed and in truth thank you for all things.

Then turning to his associates in office, he said:

In the name of the God of day, of the God of Night, of the God of the Morning, of the God of the Evening, of the Great Water Snake, of the Flower-producing Flash Lightning, of Montezuma (Pest-ya-sode), ... and of all the gods of our fathers, I thank you all for your faithful work. I thank you, cacique, I thank you, first assistant cacique, I thank you, second assistant cacique. I thank you, my first lieutenant-governor. I thank you, my second assistant lieutenant-governor. I thank you, war captain. I thank you, assistant war captain. I thank you, east-side ditch commissioner . . . . . I indeed and in truth thank you all for your faithful work.

Then as he turned his face heavenward he continued:

In the year to come as in the past, O God of Rain, give us water. As in this year, O God of Bloom, give us flowers in abundance. Oh, may the gods of our fathers give us a bountiful harvest . . . . and O God of Day, O God of Night . . . . O gods of all our fathers, give us for the year to come a good governor.

Then, with one of the official canes raised toward the heavens, the other official rod of authority suspended over his visible hearers, he said:

I indeed and in truth thank you all, both those present and those above.

After the farewell address was finished, nominations were in order. The result of the casting of lots the night before was supposed to be in secret and not known to the populace. Mr. Jose Reyes Gallena was the candidate for governor. As soon as his nomination was announced, the vote was taken by acclamation, all rising and saying "*nop*," I being asked to vote with the rest. It was unanimous. Otherwise a new candidate would needs have been proposed; for everything must be by unanimous consent with the Jemez.

As soon as declared elected, the governor-elect went to the cacique and got down on his knees before him. Then that august person, the cacique, as he bent over the man at his feet, first prayed to his deities; second, he gave the new governor instructions as to the duties of his office; and, third, he gave him the two gold-headed canes of authority, which go with the office of governor. The now inaugurated governor rose from his humble position and seated himself at the right side of the cacique beneath the section of the Rainbow in the West.

The election of the other officers immediately followed. The election of each remaining officer was somewhat similar to that of governor, except in the case of the minor officers. Each of these was nominated by the retiring officer; and, as soon as elected, the

retiring officer turned his rod of authority over to him without ceremony. In all, thirty-one officers were elected.

When all the officers had been elected, the cacique again prayed long and earnestly to his gods and to their symbolic paintings on the kiva walls. With his prayer the election closed.

I note that Dr. Parsons had the Indians make her mask drawings and those of the kiva scenes for her. All the Jemez drawings of masks and kiva scenes I have had and used in my various publications I made myself, spending days in each kiva copying the scenes depicted on its walls.

Dr. Parsons seems to doubt that the Jemez ever fled to the Navajo country during the troubled times. She states, quoting, in part, from an ancient record,

> The Jemez people were dispersed—in August (1696) when the mesa tops were reconnoitered by Lara they were found to be deserted; to live among the Navaho, possibly, I suggest, among the Zuñi, for several years.

That the Jemez went to the Navajo country is evidenced by many records and further by the fact that descendants of the Jemez who did not later return to their former home now form a part of the Navajo people, as the clan known as Maitheshkizh (Coyote Pass People), and so on.

Concerning these accessions to the Navajo tribe the Navajo Ethnological Dictionary says:[1]

> Strangely enough, some of the . . . . accessions, such as the Jemez coincide both in name and affiliation with the original clans adopted by the Navajos from that tribe. These are not regarded as captive clans, ...As their relationship with all the other clans of the group is never disputed.

Dr. Parsons secured only four or five of the many beautiful Jemez tales. Two of their other myths, which are of special interest, are here appended.

The Origin Story and the Mythical History of the Jemez People

This earth is flat and round like a pancake and is known to possess four places of habitation, situated one above another. Each has for its roof the floor of the apartment above it, except this one, which has the sky. A long, long while ago our people lived in the apartment

[1] An Ethnological Dictionary of the Navajo Language, by the San Franciscan Fathers of St. Michaels, Arizona, 426.

beneath this one. For a long time they lived there. Finally one day a man saw a hole which led up through the roof to this world. He crawled up through it and all the people followed him.

The mouth of the hole being in the far north, a council was called. At this meeting the "principals" decided to move toward the noon-day sun. Said they: "The sun warmed the place from which we came; therefore, by moving towards it this earth must become warmer." So they began their march over mountains of ice and snow toward the boiling ocean.

For a long, long time they journeyed; but the land of sunshine was not reached. On, on they marched till their food supply became scanty and their blankets became worn out. Then one by one they died of cold and hunger. For a while those who survived kept up courage even under the adverse conditions, and continued their onward march. At last, however, their numbers being so depleted they became despondent and wished all to die.

At this juncture the mother god, the Moon, prayed to her husband, the Sun, to save the remnant of men, their children. So the Sun took one of the survivors of our people, painted his body in transverse black and white bands, decorated his hair with corn husks, and suspended eagle feathers behind each ear.

As soon as he was thus painted and decorated, this man became a "funny man," and began to dance, cut capers, and make grimaces. So interested did the people become in his performing that they forgot their sorrows and became glad. They then resumed their journey, which they continued till they reached the Rio Grande confluence.

Here in this valley they ceased their wanderings and took up their abode. Being few in numbers and not trained in the arts of war and defense, they were afraid of the savage tribes who dwelt in the region. So they established their places of habitation in narrow canyons, along cliffs, and in caves. In these they lived a great, great while, subsisting on the grain they raised and on the plentiful game. Then the savage hordes began to make inroads into their territory. They killed all the game, or, by their presence, it was made unsafe to hunt. They took the fields one by one. They drove the people to the cliffs and caves; and then captured these strongholds by storm or starved the people until they came out of their own accord and gave themselves over to be slaughtered or to be enslaved. Only a few places still held out and these were reduced to such straits that their capture, followed by the massacre of the prisoners, was daily expected. Their annihilation was certain.

Again the mother god prayed to the Sun to save their children, and a second time the great father came to the rescue. At this time he placed among them a "knowing man," whose name was Pest-ya-sode.

Pest-ya-sode defeated the enemies, raised the siege of the cliffs and caves, and drove the savages out of the narrow canyons. He trained the people in the arts of war. He led them out into the open country. He at last expelled the hostile tribes from the region after a desperate encounter. He then instructed the Indians to build villages in horseshoe shape with continuous outer walls, so that they served both as places of residence and as fortifications. He taught them their religious rites and ceremonies. He instituted the sacred hunts. He taught the people to paint their houses and edifices of worship in representative figures of the gods. He made the clown-dancers the sprouters of grain; the "funny-men" the maturers of grain and of everything that lives and grows upon the earth. To the god-clown dancers he gave power to represent men before the deities. To the medicine-men he gave the power over "sickness" and over death. To the Sun priests and their aids he gave the power to intercede between those above and men.

For a long, long time he lived with them, extending their territory, building pueblos, and erecting edifices to the Sun. Finally, after he had made them a powerful and prosperous people, he called them all together and told them that there were many peoples that he must teach as he had taught them, and that he must go and instruct them. "Then," said he, "when I am gone you will neglect to do the things that I have taught you. Therefore will my father, the Sun, come in his wrath, destroy your pueblos, and give your fields to another race. After that will you return to do the things I have commanded you. Then when you have returned from your evil ways will I come on the wings of the morning, in the chariot of the Sun, expel the intruder from the land, restore your ancient possessions, and establish you in all your former glory."

After Pest-ya-sode had departed, the people did exactly what he said they would. They departed from keeping his sayings and commandments, and finally became divided. One division came to this valley, the remaining section staying at Pecos (New Mexico), the home of our tribe at the time Pest-ya-sode took his departure toward the boiling ocean. In this valley our people built village after village, only to have an earthquake throw them down or to have them razed

to the ground by some of our many enemies. We have built villages on almost every square mile of land in this valley from the Rio Grande river to this place, a distance of a good day's walk; and, besides the ruins in the valley, thirteen of our deserted villages dot the mesa to the northward between here and the boiling springs. But yet we were still powerful. We still had seven villages in the valley of this river which bears our name. Here our people were admirably situated for agricultural purposes. In the broad valley of the river and the valleys of its upper tributaries were large and good farms; while the great river always had water and to spare to irrigate the crops.

The scenery around the villages then was the same as that of the village now. To the north in Guadalupe canyon are the falls; and in the canyon of San Diego, the hot springs and soda dam. Still farther to the north is a forest-covered plateau and a great valley surrounded by obsidian cliffs and craters. To the northeast Mount Balda kisses the blue sky. To the east the Cochiti range shuts out the morning sun. To the southeast, across lava-capped mesas, our river joins the great river that flows in the direction of the sun at noon. Still farther southeast the high escarpment of the Sandia mountains rises abruptly from the plains. To the south are white-capped mesas; to the southwest, mesas and escarpments of stone so red that they reflect the rays of the morning sun, the reflected red light reaching even to this place. And to the west, the mountains, which have our name, give the sky a ragged horizon, while in the valleys are red and white domes and castled buttes.

With respect to defense, the situation of the villages then could scarcely have been bettered. The villages were walled. If defeated in the valley, our people could retreat to the isolated mesa at the forks of the river. There on its top they could make a decided stand against any enemy that might attack them, for its precipitous walls rise perpendicularly from the valley floor to eighty times the height of a man, and is only accessible by two narrow trails. But the evil day came.

While under Spanish yoke the people built the village and church of San Juan de los Jemez at the boiling (Jemez) springs, and the village and church of San Jose de los Jemez, at Canyon, the ruins of each of which still remain. Then the Indians rose against this race of intruders (1680) and killed them all at the two villages. But more palefaces came and took possession of the land.

Against the place on the mesa both in 1694 and in 1696 they came with their cannon, and after a many days' battle each time they captured it, reducing it, finally, to the mass of ruins it is this day. Furthermore, at each of these times some of our people escaped to the Navajo country, but the greater part of them were captured and reduced to a state of servitude.

They then moved us all to the valley where we now live, and where we were joined by the remnant of the Pecos tribe in 1838. Since then have we done penance and mortified our bodies to appease the wrath of our great father. And each morning at early dawn we send a man to the top of the mesa yonder to see if the great Pest-ya-sode is coming with his father on the wings of the morning to restore us our ancient possessions.

Myth About the Moon-Mother and the Bear

Long, long ago our mother, the Moon, went down to the river in the early morning to get water to use in cooking breakfast for our father, the Sun. She dipped the water-jar into the flowing water and filled it nearly full. Then, to complete the filling, she took a gourd cup, as we all do, and commenced dipping up cups of water to put into the jug. Once, as she was leaning over to fill the cup, a bear, which had approached unnoticed, seized her from behind and carried her to his great cave in the mountains. In the entrance he then rolled a big rock, so that she could not escape, and there he kept her, bringing her food each day.

After she had been there a great while, she gave birth to a male child, the son of the god of day. This child grew to full maturity in this cave. He could not get out, because, on leaving each morning to search for food, the bear always rolled the rock into the entrance, and, on his returning, he closed it behind him at all times with the same rock. But after obtaining his full powers, this offspring of the parents of all things was able to roll the stone away and go where and whenever he pleased. He always continued, however, to go after the bear had departed in pursuit of game and to return before that animal came back at the close of day.

At first, this son of the Moon thought that he was the offspring of the bear, but, at length, his mother told him who has true father was and related to him how it happened that she was in that miserable condition. From that time on the mother and son talked over plans of escape. At last they made up their minds what to do, and at the first opportunity they failed not to put their plans into execution.

As soon as the bear was out of sight and hearing one morning, the son of our great mother rolled the stone from the cave entrance, put his mother on his back, and ran and ran all day toward the place where the sun sets; because he knew that at this place the sun touches the earth on all sides of the great hole at his going down. Towards night they could hear the growling bear coming in the distance. Harder and harder our first brother ran with our mother. Nearer and nearer the bear came. With open mouth he got so close to them that his breath blew in our mother's face. With a horrifying growl the animal sprang to seize her. At the same moment our brother, with one great leap, reached the palace of the sun. Then the great gate closed and shut the bear out.

But the terrible beast charged upon the gate and would have broken it in pieces had not our brother left his mother and driven him from the palace front with his mighty war-club. Bent upon having his wife, as the bear styled our mother, he then attacked the palace in the rear. On this side another of our brothers, a son of those above, defended the edifice and drove the infuriated animal away.

To reward these defenders of the Sun's wife and of his home, the Great Spirit made our first brother the morning star, and the other the evening star. They are in the sky. We have all seen them. The morning star still guards the entrance to the sun in front, the evening star the entrance in the rear, while the bear is cast far out in the cold, northern heavens.

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INDIAN FIELD SERVICE
CORNFIELDS, VIA GANADO
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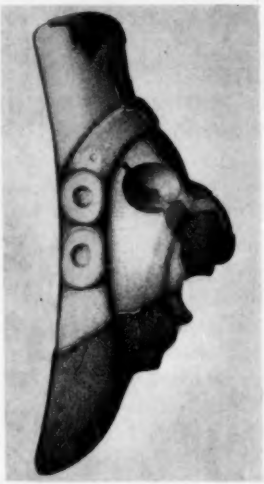
THE USE OF PLASTER ON PORTO RICAN STONE CARVINGS

Students of Porto Rican archaeology have been puzzled by the wide variety in quality of the stone carvings from that island. The Indians of Borinquen had acquired great skill in the cutting and polishing of hard stones, and certain examples of their handiwork—

celts, monolithic axes, three pointed stones, collars, etc.—exhibit a technical mastery of material scarcely equaled in the New World. It is therefore surprising to find artifacts at times finely wrought and at times roughly finished.

A plausible explanation for this divergence in quality is offered by the stone head here illustrated. It is a head of a not uncommon type, curved at the back in a manner suggesting the more frequently



Stone head, Manati, Porto Rico. Length: 10 inches.

encountered three pointed stones. However, it is a most unusual piece in that the surface of the stone has been encased in a thin layer of plaster. Today the plaster is badly cracked and roughened by erosion, but the original surface seems to have been nicely smoothed. This head was found near Manati on the north coast of the island. It is said to have been dug out with a stone collar. When seen by the writers several years ago it was in the possession of Señor Masso, district inspector of schools at San German.

The use of plaster to finish stone carvings was well known in Mexico and Central America, and examples may be seen in any good collection. In that region, paint and inlay of shell and stone played

an important part in the final appearance of the sculpture. In the West Indies a few examples of shell inlay have survived, and traces of paint can be seen on a few carved stones. We judge that the Porto Ricans were so inexpert in the making of plaster that it has rarely survived and can only be preserved by expert handling when exposed to the air. Most unfortunately for our knowledge of the island none of the more important types of stone objects represented in our museums has been excavated by trained observers.

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ZEITSCHRIFT FÜR VÖLKERPSYCHOLOGIE UND SOZIOLOGIE

In January, 1925, Californian friends of Dr. Richard Thurnwald received a letter from him in which he stated that

> after nearly a decade of starvation in Germany, one notices a decided improvement in affairs; and therefore I am now in a position to found a new journal. It will be called "Zeitschrift für Völkerpsychologie und Sociologie."

He succeeded in assembling a group of fellow-workers, and, in consequence, it is now possible to give a brief indication of the first issues. The Journal is, possibly, the first to include all sciences connected with man's life; i.e., sociology, pedagogy, economics, criminology, psychiatry, biology, and above all psychology. The latter half of each number comprises reports and discussions of recent books and significant papers from European and American journals, giving also a list of the latest journals and books.

A fitting article for the opening number of 1925 is Dr. Thurnwald's, "Problems of Racial Psychology and Sociology," which is remarkable both for information and style. We have here a short account of earlier and somewhat similar journals, and an explanation of the connection between the sciences of psychology, sociology, biology, and anthropology. The author also discusses sociological topics, elucidating them by means of illustrations from the lives of the natives of New Guinea, Australia, and from characters in history. This paper has a sequel in an article of the March journal of 1926, called "Leadership and the Sifting Process," an important discussion of the development of leaders and their influence on the group.

The islands of the Pacific are treated in Dr. B. Malinowski's "Investigations in a Mother Right Community" and in Dr. A. W. Nieuwenhuis' "Primitive Man and his World." The latter is an analysis, according to the laws of psychology, of the mind of primitive

man, as shown by his reactions to the world about him, this domain being the Malay and the Indian Archipelagos and some islands of the Dutch East Indies.

Dr. V. E. von Gebsattel's article on "Marriage and Love," is devoted to the difference between transitory love and marriage. He demonstrates that marriage, as an institution, is not at fault, because of many unhappy unions; but that there are unfortunate marriages for the reason that they are based on physical attraction, which does not outlast the first few months. There is a wide-spread belief that love and marriage are incompatible, and that as marriage has failed, illegal love is justifiable. According to Ellen Key, such unions, where love exists, may be excusable; but not polygamy, as practised by so-called civilized people. This is degeneration. The author states that a successful marriage is founded neither on amativeness nor romantic Eros, but on an affection which sees in the beloved a *beau ideal*, a spiritual image, but one of decided essentiality. Dr. von Gebsattel shows that both a free union and marriage have this ideal conception, but that the latter is the better way. For into it enters obedience to the laws of the community.

Attention may also be called to an authoritative article by E. Schultz-Ewerth, late Governor of German Samoa, on "The Dangers from the Colored Races." The writer states that the awakening of the colored peoples is, psychologically, an increasing self-consciousness, which denies the intellectual and moral superiority of the European. He explains that civilization alone is to blame for this, and that every European, no matter what his position, who shares in the propogation of the things the white man's intelligence has produced, is at once a propagandist of the revolution.

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THE MORNING STAR CULT IN THE SOUTHWEST

The following extract from field-notes made at the Tewa pueblo of Hano in 1912 is offered as a supplementary note to Mr. Ralph Linton's article on the origin of the Pawnee Sacrifice to the Morning Star in the AMERICAN ANTHROPOLOGIST for July 1926.

When any scalps were taken, they were brought to the *p̂o ta'i'i;* he watched the night with them, and before day, at the rising of *'Agayo Tso'yo* ("Great

Star"), he washed their hair and gave them a name. But the name was always the same—*'Agayo Tso'yo*. [Informant: Be'iti, Cloud clan, Hano, aged about 80. Interpreter: 'Agayo Ts'æ, Corn clan, Hano.]

P'ota'i'i ("dry head one") was the title given at Hano to a noted scalp-taker who had become a war-chief. "Washing the head and giving a name" is the regular form by which a change of status is marked, e.g., at adoption into a clan. At Oraibi the scalp-taker himself was given a new name, which he kept secret. *'Agayo Tso'yo* is the Morning Star.

In the version of the Tewa migration-story told by the Corn clan at Hano, the part usually played by the *Pęni Tso'yo* ("Great Dead Man") is assigned to the *'Agayo Sęŋ'i'i* ("Horned Star"). The *Pęni Tso'yo* of Tewa mythology corresponds to the Hopi *Masauwû*, who is sometimes represented by an actor wearing a mask with a bloody head, as if newly scalped.

The interpreter said that the Horned Star is not visible in the sky: "it is on the upper side of the sky—does not like to be seen; we pray to him for things."

In the same version of the migration-story, it is said that when the people were making the stars of quartz crystals, "they made *Tse kąŋ kwiyo* ("yellowness gone lady"), the star which is seen in the western sky at sunset; and also the star which is seen in the east when the sun sets. Next they made *T'ili'i* ("crowded"), the Pleiades; *Kwidi'i* ("ranged in a row"), Orion's Belt another star in the south-west, *Kodi îowa 'agayo* ("rich people star"); and another in the east or north-east which they called *P'o ta'i'i* "scalp-taker" or "war chief." "These two, *Tse kąŋ kwiyo* and *P'o ta'i'i*, are both *p̂o ta'i'i*, and have to take care of the others who are to be their children. *T'ili'i* are the people."

BARBARA AITKEN

LONDON, ENGLAND, October 1926.

DIFFUSION CENTER VS. MELTING POT

In writing on "The Origin of the Skidi Pawnee Sacrifice to the Morning Star," (AM. ANTH., July 1926), Ralph Linton ends his clear article with the words,

> Nearly all the specialized Mexican traits which are present in the Southeast are lacking in the Southwest and vice versa. I think that this fact can only be explained by the assumption that there were two centers of diffusion within

Mexico, one of which influenced the Southeast and the other the Southwest. One center was probably in the highlands, and the other on the east coast. To judge from the traits which spread northward from them, the cultures of these two centers must have differed considerably.

May I make the suggestion that Mexico was influenced by the north, and blended the two northern cultures? We know that there was communication between Mexico and the Southeast and Southwest. It is possible that Mexico adopted scaffold torture, temples built on pyramidal mounds, certain pottery forms and art motives from the lower Mississippi valley, and stone construction, impersonation of deities, cardiac sacrifice, weaving, mosaic work and the maize complex from the Southwest. If we adopt this view, we shall find no occasion for surprise that "Nearly all the specialized 'Mexican' traits which are present in the Southeast are lacking in the Southwest, and vice versa."

Any high civilization is not only a center of diffusion, but also a melting pot; a focal point as well as a focus. Simple civilizations, in the aggregate, probably influence neighbouring complex civilizations as much as they are influenced. Thus Rome was not merely a diffusion center, but a cross-roads where many civilizations met, and were either elaborated or debased. Of course, both ancient Rome and ancient Mexico made original contributions to civilization, too. But we must not forget that the Aztec, Maya, and Inca drew upon the surrounding tribes for cultural traits, just as New York City draws upon Sleepy Hollow, Baltramansk, and the seven Buddhist hells for sweetness and light.

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REPORT TO THE COUNCIL OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION BY THE CHAIRMAN OF THE DIVISION OF ANTHROPOLOGY AND PSYCHOLOGY OF THE NATIONAL RESEARCH COUNCIL[1]

At its last annual meeting, the Council of the American Anthropological Association appointed a committee consisting of Doctors Boas, Hough, and Hooton to consider the relations between the

[1] Received by the Editor on April 25, 1927.

Association and the National Research Council. On February 24, 1926, Dr. Boas, Chairman of the Committee communicated to the Division the following:

> In the opinion of the American Anthropological Association a closer cooperation between the National Research Council, more particularly to the Division of Anthropology and Psychology, is considered highly desirable. Since the American Anthropological Association appoints representatives, it shares with the National Research Council the responsibility for the conduct of the Division and for enterprises in which the Division participates. In order to make this possible the American Anthropological Association believes that it is indispensable that annual reports on the progress of work in the Division should be rendered, and it should be in a position to express its opinion in regard to the work that is going on.

I had the privilege of taking part in the discussion which led to the formation of Dr. Boas' committee; I have since talked with many Anthropologists about the affairs of the Division; and since assuming its chairmanship I have naturally given much anxious thought to the question of how it might best advance our science. The result of all this is a belief that the Division has not yet been able to fulfil to the maximum its possibilities for service, because it has not had the enthusiastic support of Anthropologists, and that this support has been withheld because the nature and particularly the limitations of the Division have not been made clear to them. Anthropologists have expected more of the Division along certain lines than was possible for it to accomplish; and their disappointment in this regard has, I think, diverted their attention from less obvious but surely no less important aspects of the Division's field of work. It may be well to state briefly the aims of the National Research Council and the organization of the Division.

> The National Research Council is neither a large operating scientific laboratory, nor a repository of large funds to be given away to scattered scientific workers or institutions. It is rather an organization which while clearly recognizing the unique value of individual work hopes expecially to help bring together scattered work and workers, and to assist in coordinating, in some measure, scientific attack in America upon large problems in any and all lines of scientific activity, especially, perhaps, upon those problems which depend for successful solution on the cooperation of several or many workers and laboratories either within the realm of a single science or representing different realms in which various parts of a single problem may lie.[2]

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[2] Annual report for 1926, p. 2.

Aside from a small group of permanent administrative officers, the Council, or rather that part of it which concerns itself with the natural sciences, is made up of representatives of the leading scientific and technical societies of America, plus a certain number of members at large. These are grouped into seven divisions: (1) Physics, Mathematics, and Astronomy; (2) Engineering and Industrial Research; (3) Chemistry and Chemical Technology; (4) Geology and Geography; (5) Medical Sciences; (6) Biology and Agriculture; (7) Anthropology and Psychology.

Our Division is made up of six representatives from the American Anthropological Association; six from the American Psychological Association; six members at large, three Anthropologists and three Psychologists; one representative from the Educational Research Association, and one from the Council's Division of Federal Relations. From this membership there is chosen a resident chairman who ordinarily serves for one year. When the chairman is an Anthropologist the vice-chairman is usually a Psychologist and vice-versa; there is, however, no regulation governing this matter, nor is there any provision that strict alternation of Anthropologists and Psychologists should take place in the choice of chairmen. The salaries of the chairman and his secretary are paid from the general funds of the Research Council; the Division also receives from the same source a yearly appropriation for general maintenance, sufficient to cover the cost of the annual meeting, and leave a small balance for contingencies. The Division has no funds of its own to be allocated for research.

The present anthropological activities of the Division are as follows:

(1) *Committee on State Archaeological Surveys.* Seeks to stimulate archaeological work by properly qualified state agencies, to coordinate the results of such work, to promote contacts between investigators, and to encourage the preservation of archaeological sites. Publishes each year in the AMERICAN ANTHROPOLOGIST a summary of current projects.

(2) *Committee on Child Development.* The work of this committee concerns all biological aspects of the child of pre-school age. Included among its interests, therefore, is the physical anthropology of children, and the anthropological side of child-psychology.

(3) *Committee on the Classification of Anthropological Literature.* Organized to pass upon a specific project in classification. It is also available for service as an advisory body.

(4) *Committee on a Study of the American Negro.* Newly organized at the request of Anthropologists for the purpose of coordinating and stimulating Negro research.

(5) *Committee on a Study of Pelvic Structure.* Newly organized for the purpose of considering a specific project of research.

The Division can serve Anthropology in many ways. It provides by its annual meetings and by the four stated meetings a year of its Executive Committee, opportunity for the discussion of anthropological topics, and the consideration of anthropological projects, by a group of representatives of the Anthropological Association, who, if the Association selects wisely, should be those most competent for such deliberations. Secondly, the Division has, approximately every other year, an anthropological chairman, resident in Washington, equipped with adequate office and secretarial facilities, who not only can devote a considerable share of his attention to anthropological matters, but can work under the most favorable conditions to promote between Anthropology and the other sciences represented in the Council those contacts which are so essential to the progress of research. Furthermore, the Division can provide the machinery by the establishment of sub-committees both within and without its membership, for the study or promotion of special aspects of Anthropology. Finally, it can be of assistance in the raising of funds for the prosecution of anthropological research by adding the weight of its endorsement to projects already under consideration by donors or by attempting itself to find donors and enlist their support.

The organization and the scope of the Division have now been considered. It remains to discuss certain criticisms of the functioning of the Division. It has been felt by some:

(1) That it loses efficiency by attempting to cover two fields as large as Anthropology and Psychology.

(2) That it has been inactive.

(3) That it has not kept the Association informed as to its activities.

(4) That it has failed to secure adequate financial backing for Anthropological projects.

(5) That it has expended money unwisely.

The association of Anthropology and Psychology in one Division of the Research Council is primarily a matter of financial necessity. Sufficient funds are not available to provide for separate Divisions of these two sciences. That we are not discriminated against in this regard is shown by the grouping in the Council of, for instance,

Physics, Mathematics and Astronomy; and Biology and Agriculture. It would, of course, be desirable in many ways for us to enjoy the material benefits of an independent section; but, on the other hand, there are very distinct compensations. As has often been pointed out, the contacts between Anthropology and Psychology are both numerous and important. Each science has developed techniques and has acquired data of great value for the other, and the pooling of these, together with the diverse view-points from which problems can be considered, has always been one of the most stimulating aspects of the Division's work. It should be added that the Psychologists have never attempted to assert that dominance in the affairs of the Division, to which the numerical superiority of workers in their science (probably ten to one) might seem to entitle them. They have, as a matter of fact, done everything in their power to assist the growth of Anthropology, and are attempting at the present time to promote its teaching in those universities which have no departments.

If the Division has been inactive, its inactivity has been due, I am sure, more to lack of funds than to bureaucratic sloth. That it has not kept the Association informed as to what it has done is, it seems to me, a much more serious charge, because it has not only deprived the Association of knowledge to which, as the agency responsible for the selection of the anthropological members of the Division, it is naturally entitled; but has deprived the Division of that whole-hearted coöperation of all Anthropologists which is so absolutely essential for its development.

The feeling that the Division has failed to secure adequate backing for Anthropological projects, and that when money was available it has at times been unwisely expended, has, I believe, less justification. It is due to a misunderstanding on the part of Anthropologists of the policy and especially of the financial limitations of the Research Council. As has been said before, the Division is not in possession of funds for distribution in the form of grants. Such funds would, indeed, place it in the difficult position of arbiter between the merits of different aspects of research; it is always ready, however, to do what it can to assist in the financing of worthy projects. In the case of our Division, funds have come in two ways. In one set of instances, donors have approached the Division for advice as to the accomplishment of certain definite ends, and have later requested the Division, through one of its committees, to undertake the administration of grants. Certain projects originating outside of this Division and

coming to it, so to speak, ready-financed, have presumably given rise to the feeling that the Division was spending money unwisely, because it was being used for undertakings not thought by some students to be of primary importance. It should be remembered, however, that for the prosecution of these researches, no funds have been depleted that could have been disbursed for other activities. Needless to say, the Division only accepts responsibility for undertakings as to the value of which it is thoroughly convinced; and the most captious critic could hardly object to its employment of available funds for worthy ends, merely because support for other researches, even possibly of greater significance, could not at the moment be had.

The same set of considerations applies to the financing of projects originating in the Division, or presented to it for assistance. Donors, whether individuals or foundations, usually have special interests or special fields of endeavor, and if projects under consideration happen to be in line with these, backing is naturally not difficult to obtain. If, however, a project does not accord obviously with the desires of any potential donor, the Division must, like any other sales agency, attempt to create a demand for it by emphasizing its basic scientific importance, or its immediate practical value. The success of the Division's effort must necessarily depend, to a large extent, upon the assistance that it receives, first from those actively interested in any given project, secondly from the general body of Anthropologists. Without the former it can hardly hope to present the concrete case with a maximum of effect; without the latter it can never attain a position sufficiently influential for its recommendations to carry weight. Anthropology will be benefited by the Division in exact proportion to the amount of effort that Anthropologists are willing to put into it.

A. V. KIDDER

ANTHROPOLOGICAL NOTES AND NEWS

THE PUTNAM BAFFIN ISLAND EXPEDITION sailed last summer under the auspices of the American Geographical Society, the Museum of the American Indian, Heye Foundation, the American Museum of Natural History and the Buffalo Society of Natural Sciences. The planned route of the expedition was westerly through Hudson Strait and thence north into the Fox Basin district. The expedition's anthropological activities were carried on in behalf of the Museum of the American Indian, Heye Foundation which was represented by Donald A. Cadzow.

Field Museum of Natural History is making available for public exhibits, fourteen large halls through a rearrangement of its heating system. Of these halls, eleven will be devoted to anthropological specimens. Among exhibits planned are those from Melanesia, the Philippine Islands, Malay Peninsula and Malay Archipelago, Polynesia, Micronesia, Madagascar and East Africa, North, West and South Africa, India, Egypt and Mesopotamia. The new halls will make it possible to devote the entire east wing of the main floor exclusively to North, Central and South American archaeology and ethnology. One of the new halls will be devoted to exhibits illustrating the progress of prehistoric man, for which Henry Field, assistant curator of physical anthropology, is now collecting in Europe. Another hall will be devoted to physical anthropology.

ERICH F. SCHMIDT, assistant in archaeology in the department of anthropology of the American Museum of Natural History, has joined the field party of the Oriental Research Institute of the University of Chicago, to assist in an archaeological reconnaissance of Asia Minor. —*Science*

DR. GEORGE GRANT MACCURDY, of Yale University, director of the American School of Prehistoric Research, was designated to represent the Paris Society at the commemoration of the two hundredth anniversary of the founding of the American Philosophical Society, held in Philadelphia, April 27 to 30.

DR. MACCURDY has been appointed a member-at-large of the division of foreign relations of the National Research Council. Dr. and Mrs. MacCurdy will leave for Europe on May 19 to do reconnaissance work in prehistory prior to the opening of the summer term of the American School of Prehistoric Research on June 27. —*Science*

MRS. ZELIA NUTTALL has recently been elected fellow of the Royal Anthropological Institute of Great Britain and Ireland and corresponding member of the Geographical Society of Philadelphia, to fill the vacancy created by the death of Sir John Keltie, the president of the Royal Geographical Society of England. —*Science*

PROFESSOR WILLIAM THALBITZER, Danish naturalist and Arctic explorer, has been awarded the Loubat prize of the Swedish Academy of Science. —*Science*

DR. WALDEMAR JOCHELSON, who has been the guest of the American Museum of Natural History during his visit to America, is now preparing to return to Russia, where he has accepted a position as division curator of the Museum of Anthropology and Ethnography of the Academy of Sciences, Leningrad, and as lecturer on ethnology at the Leningrad University. —*Science*

DR. TRUMAN MICHELSON, ethnologist in the U. S. Bureau of American Ethnology, resumed his studies among the Fox Indians of Iowa during the summer. —*Science*

According to the Italian correspondent of the *Journal* of the American Medical Association, the Emperor William institute for anthropology, hereditary transmission in man, and eugenics, which is being erected in Dahlem, near Berlin, by the Kaiser-Wilhelm-Gesellschaft, is rapidly nearing completion. Professor Eugen Fischer, anatomist, of Freiburg, will be the director of the institute. He will also be the head of the department of anthropology. The department of hereditary transmission in man will be in charge of Professor Muckermann, a former Jesuit father. The head of the department of eugenics has not yet been announced. It was hoped that the new institute can be dedicated in September, in connection with the

meeting of the International Congress on Heredity, which it to be held in Berlin. —*Science*

NEIL M. JUDD, curator of American archaeology in the United States National Museum, has left Washington to complete his explorations at Pueblo Bonito, New Mexico, under the auspices of the National Geographic Society. This season's expedition is the seventh sent by the Society for the purpose of recovering and recording the story of this prehistoric Indian village. —*Science*

PROFESSOR FAY-COOPER COLE, of the department of anthropology, University of Chicago, continued the extensive study of the Illinois mounds which he began last year. Illinois, according to Professor Cole, is the key state in anthropology for prehistoric America. His work last summer was part of a program that may take ten years to complete. Information was gathered on the mounds of the state by advanced students under his direction, and some preliminary excavations made. —*Science*

PROFESSOR EDWIN SAPIR, of the department of anthropology, University of Chicago, and Fang-Kuei Li, Chinese student, studied the language of a group of Hupa Indians in northwestern California. Li, who is specializing in linguistics, is working under the committee on American Indian languages of the Council of American Learned Societies. He will teach Chinese at the university next year.
—*Science*

WARREN K. MOOREHEAD, director of the department of archaeology at Phillips Academy, recently received the honorary degree of doctor of science from Oglethorpe University, in recognition of work in American archaeology. —*Science*

DR. FREDERICK STARR, associate professor emeritus of anthropology at the University of Chicago, who has returned from Japan, gave on August 2 a lecture at the university on life in that archipelago.
—*Science*

SIR HARRY JOHNSTON, the well-known explorer, naturalist and author, died in London on July 31, aged sixty-nine years.
—*Science*

DR. GUSTAV FRITSCH, professor of anatomy and physiology in the University of Berlin, has died at the age of eighty-nine years.
—*Science*

DR. WEGNER, professor of anthropology at the University of Frankfurt, has been chosen by the German minister of science, arts and education to conduct the 1928 expedition to Bolivia of the Frankfurt Society of Anthropology, Ethnology and Palaeontology.
—*Science*

DR. OTTO RECHE, since 1924 professor of anthropology and ethnography in Vienna, has accepted the corresponding position in Leipzig.

FELLOWS OF THE SOCIAL SCIENCE RESEARCH COUNCIL

The Fellowship Committee of the Social Science Research Council announces the appointment of the following eighteen scholars as research fellows of the Council for the year 1927–28, with two applications pending.

Of these the following are new appointments:

Asher Achinstein (Ph.D. Columbia)

Graduate student, Columbia University
Project: Time Sequences of Cyclical Phenomena in Business with Particular Reference to the Lag Between Production and Prices.
Place of study: New York.

Crane Brinton (Ph.D. Oxford)

Instructor, Harvard University
Project: The Economic and Social Status of the Rank and File of the Jacobin Clubs during the French Revolution.
Place of study: France.

Emily Clark Brown (Ph.D. Chicago)

Research Assistant, University of Chicago
Project: Industrial Relations in the Printing Trades in the United States and Great Britain.
Place of study: New York, Boston, Baltimore.

Ruth L. Bunzel (Ph.D. Columbia)

Graduate student
Project: Social and Individual Adjustments in a Primitive Community, with Special Reference to the Zuñi Indians.
Place of study: Zuñi, New Mexico.

Walter L. Dorn (Ph.D. Chicago)

Instructor in History, Dean in the Colleges of Arts and Literature, Chicago
Project: The Public Administration of Frederic II of Prussia.
Place of study: Berlin, Vienna, Paris and London.

Wallace K. Ferguson (M.A. Cornell)

Assistant in Medieval and Intellectual History, Cornell
Project: A Study of the Social and Political Ideas of Erasmus Based on His Unacknowledged Publications.
Place of study: England, France, and Germany.

Leo Gershoy (Ph.D. Cornell)

Private tutoring
Project: The Career and Influence of Barére during the French Revolution.
Place of study: France.

William T. Ham (Ph.D. Harvard)

Instructor and Tutor in Economics at Harvard and Radcliffe
Project: Industrial Relations in the Building Trades in Great Britain and Germany.
Place of study: Great Britain, Germany, France.

Mildred L. Hartsough (Ph.D. Minnesota)

Instructor in Economics and Sociology, Smith College
Project: A Study of Economic Concentration in Western Germany and the Rhineland, with Some Reference to Its Political Aspects.
Place of study: Berlin, Hamburg, and Rhenish Cities.

Leonard Manyon (B.A.)

Instructor in History, University of Michigan
Project: The Guild Movement in Italy under the Fascist Régime.
Place of study: Italy.

Jacob Perlman (Ph.D. Wisconsin)

Assistant Professor in Economics, Northwestern University
Project: The Development of the Brotherhood of Lomotive Engineers with Special Reference to the Transition to the New Unionism.
Place of study: Cleveland, Ohio.

James K. Pollock, Jr. (Ph.D. Harvard)

Instructor in Political Science, University of Michigan
Project: The Use of Money in English, French, and German Elections.
Place of study: England, France, and Germany.

Frederick S. Rodkey (Ph.D. Illinois)

Associate Professor of History, Miami University, Oxford, Ohio
Project: British Interests and Policies in the Near East, 1821–1878.
Place of study: London, Near East, Vienna, and Paris.

Max J. Wasserman (Docteur en Droit, University de Lyon, France)

Associate in Economics, University of Illinois
Project: The Effect of Monetary and Credit Inflation in France on Some Aspects of French Business Enterprise.
Place of study: Paris and Lyons, France.

Helen L. Witmer (Ph.D. Wisconsin)

Assistant Professor, Social Hygiene Research, University of Minnesota
Project: Some Effects of the English Social Insurance Acts on Pauperism.
Place of study: London.

The following are reappointments:

Norman E. Himes (M.A. Harvard)

Instructor in Economics and Sociology, Cornell College, Mount Vernon, Iowa.
Project: The History of the Birth Control Movement in England with Special Reference to the Development and Work of the Birth Control Clinics.
Place of study: England.

William Jaffé (Docteur en Droit, Paris)

Tutor in French and Economics, College of the City of New York
Project: The Industrial Revolution in France
Place of study: France.

Heinrich Klüver (Ph.D. Stanford)

Instructor in Psychology, University of Minnesota
Project: The Eidetic Type: Field Studies in Various American Communities.
Place of study: Columbia University.

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